FIRE ENGINEERING

The Journal of the Fire Protection Profession Since 1877

MAY, 1947

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Texas City, Tex., Waterfront, Twenty-Four Hours After Initial Blast (See Article on Page 294)

A CASE - SHEPPERD - MANN PUBLICATION

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FIRE ENGINEERING

A Consolidation of FIRE AND WATER ENGINEERING, THE FIRE ENGINEER, FIRE PROTECTION *and* FIRE SERVCE

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FRED SHEPPERD
Editor

ROI B. WOLLEY
Assistant Editor

A Gracious Sentiment

HERE'S a cablegram received by the editors of FIRE ENGINEERING:—

"DOULOUREUSEMENT ÉMUS CATASTROPHE TEXAS CITY VEUILLEZ TRANSMETTRE POMPEIRS AMÉRICANS SENTIMENTS FRATERNELS ET SINCERES CONDOLEANCES."

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- L'ALARME's decision to select FIRE ENGINEERING as the "instrument" through which to convey its kindly sentiments is both a compliment to this nation's fire service—and to the journal that has represented it for 70 years.

The Publishers

FIRE ENGINEERING

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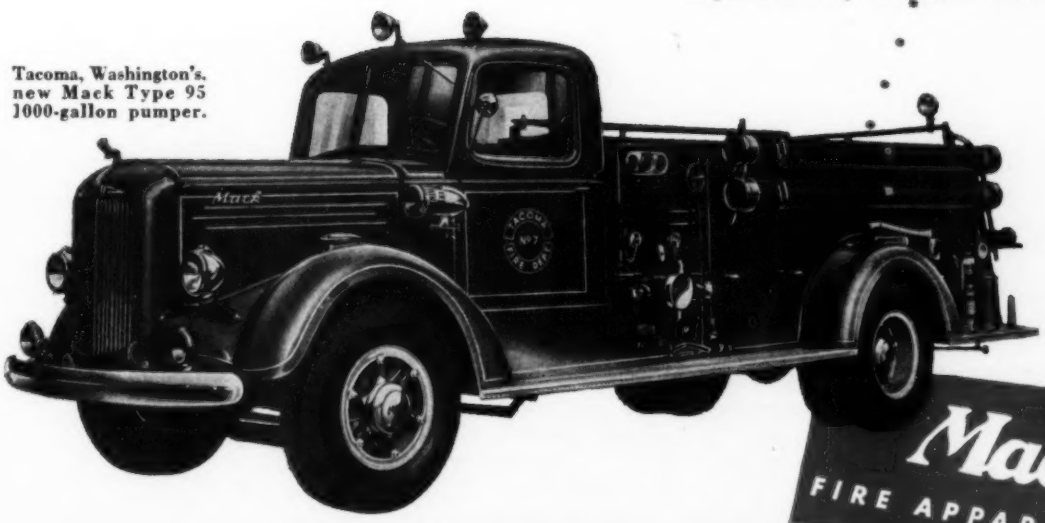

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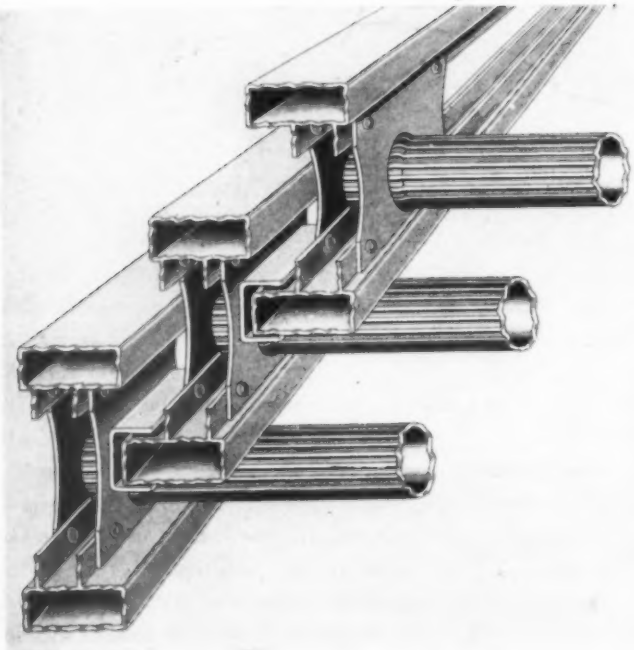

feature:

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Mr. Roy Pulver, Sales Manager
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Edw. J. Hart, Chief

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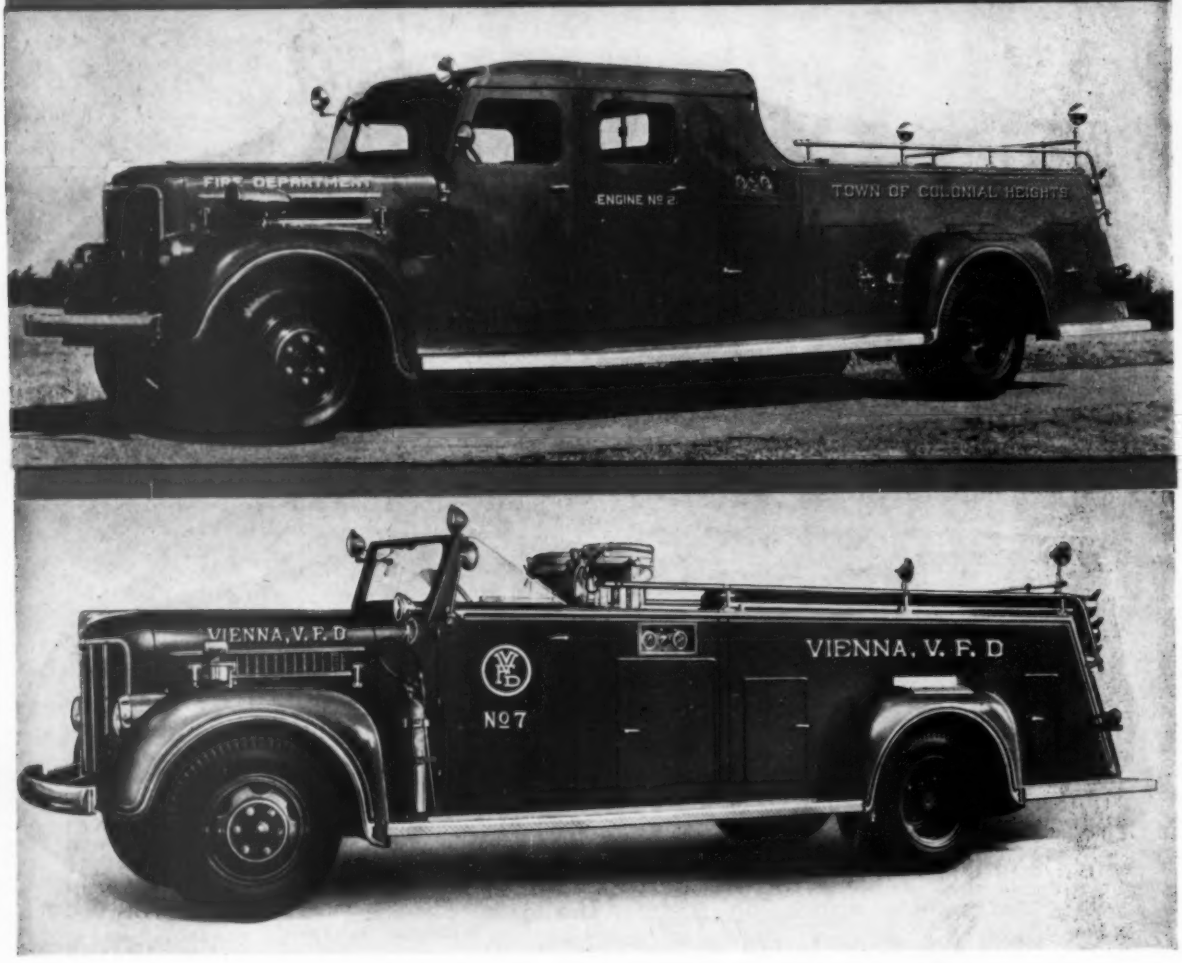

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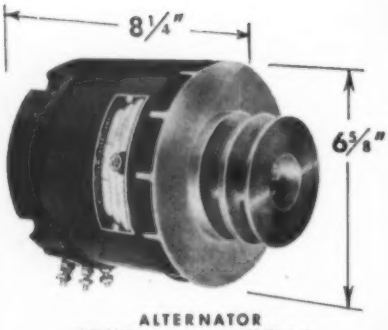

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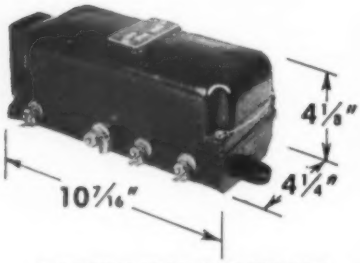

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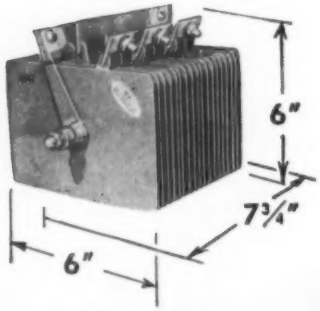

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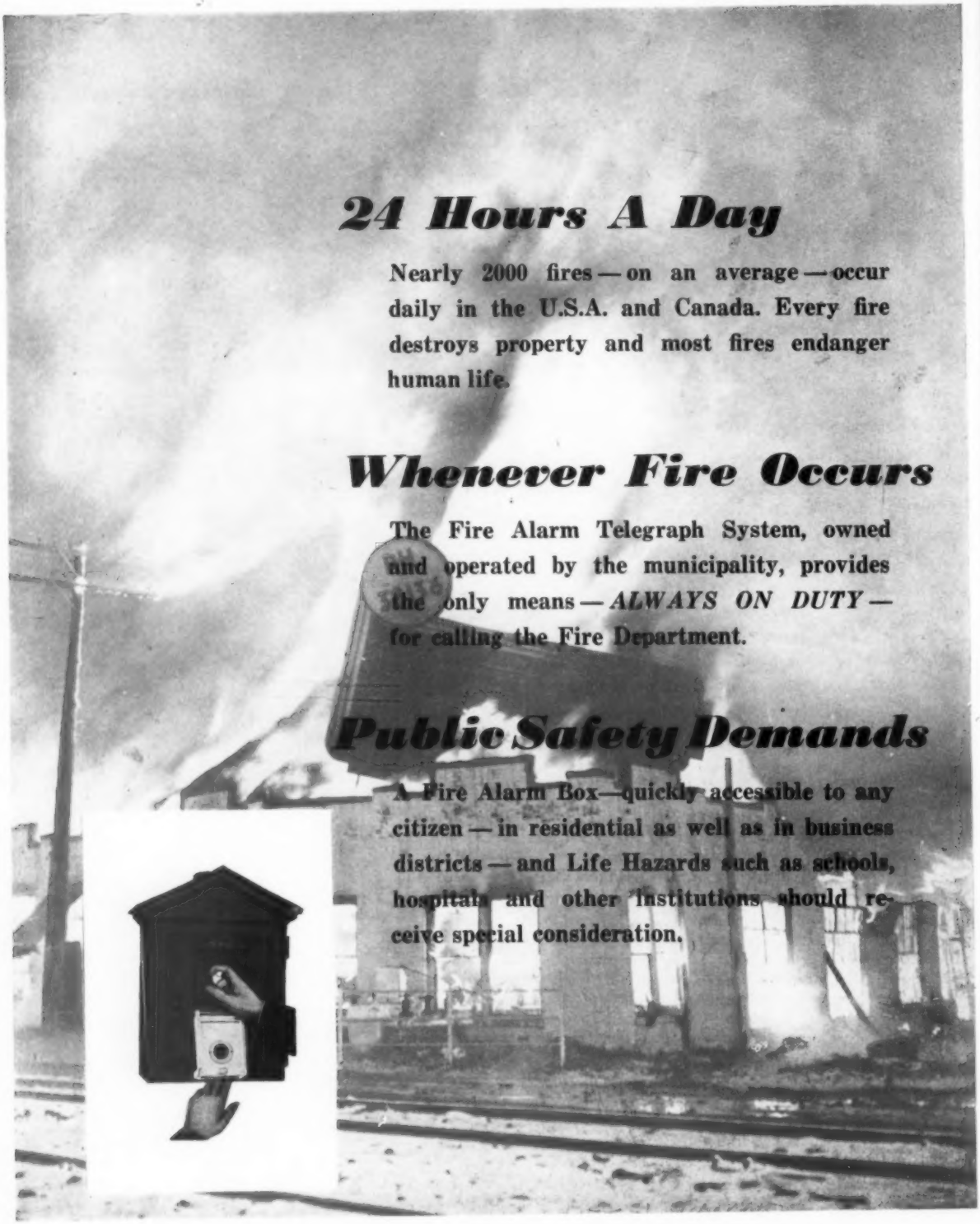

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IN CANADA: NORTHERN ELECTRIC COMPANY, LTD., MONTREAL

MAY, 1947

FIRE ENGINEERING

VOL. 100, NO. 5

With the Editor

A Dangerous Suggestion

New York City is faced with the biggest budget ever set up for this metropolitan city. So large is it that Mayor O'Dwyer will be forced to dig up new sources of revenue, or make drastic cuts in essential services, to make ends meet. Incidentally, this embarrassing position in which the city finds itself is due largely to the Administration's insistence on running the city's transit system at a loss. Today the large operating deficits of the transit system are made up by withdrawals from tax revenues.

As a means for reducing costs of operating essential city services, Mayor O'Dwyer recently suggested the amazing innovation of merging the city's Police, Fire and Correction Departments into a Department of Public Safety; combining the Department of Sanitation and Department of Public Works into a single unit, and then uniting these two super units into a single department.

Without complete details of the proposal before us it is perhaps unfair for us to offer any but the most general comments. It is difficult to see, however, where in New York it will prove any more of an *economy* measure than the Mayor's recent decision to appoint an additional executive head and an additional fire commissioner for the Fire Department with an increased cost of over $15,000 to the city.

On the contrary, the measure would set up a new governmental unit possibly with a new commissioner and staff as the super overlord of the combined departments. Anyone familiar with municipal government knows how rarely combinations such as the Mayor suggests, however well intentioned, actually reduce local government costs. Perhaps Mayor O'Dwyer can swing it, but we doubt if the city will see a reduction in the number of fire and police commissioners and other departmental personnel through the merger of the two.

As for the wisdom of putting firemen on the streets, and having police and other men do fire fighting, as is planned under the new set-up, we may be all wrong, but we seriously doubt its efficiency. Fire prevention and fire protection (and, we rather imagine, the jobs of subduing crime) are daily becoming more complicated and complex. They call for more specialized and concentrated training and operations, rather than a scattering of effort.

We can see where the Mayor has some practical economy-minded ideas in having all municipal employees take a more active interest in the operations and objectives of other departments. Unquestionably the small army of Police and Sanitation Department employees can do more than they are doing to prevent fires, but the business of fire extinguishment is essentially a job for the trained technician, equipped with apparatus and facilities designed and built for the special tasks involved.

Right now, we do not know how the executive heads of the city's Fire and Police and other departments feel about the proposed changes. We rather imagine, however, they are a bit confused, to say the least. We wonder, too, how fully the Mayor consulted these executive heads before offering his revolutionary plan. Meanwhile, one thing is certain: an interested fire service (not to speak of other municipal services) will await further moves in the gambit, with more than passing interest.

Fred Shepperd

Ammonium Nitrate Explosion Held Cause of Texas Disaster

Combination of Circumstances, Including Permitting Peacetime Concentration of War-Time Fire-Explosion Hazards and Failure to Evaluate Risks, Results in Near Record Disaster

By ROI B. WOOLLEY

Editor's Foreword: In all its seventy years of recording the history of the fire service, FIRE ENGINEERING has never known such a succession of tragic and costly catastrophes as have occurred in the first quarter of 1947, climaxed by the Texas City holocaust of April 16.

More than thirty-five disasters, causing approximately 500 deaths, were already recorded for 1947 before the Texas City explosions and fire. All this at a time when the nation's fire prevention and fire protection experts were making the greatest efforts of their lives to control the rising tide of destruction—efforts which the White House will officially augment with the President's Conference on Fire Prevention, held May 6, 7 and 8 last.

The Texas City tragedy is so epochal, so vast and far-reaching in its ramifications and implications, and there are so many significant factors relating to its cause and effects, that manifestly it will be some time before the entire story can be told, if it ever can.

Meanwhile, and until that time, the following account, which is based upon advance information received from FIRE ENGINEERING's correspondents, including officials of the fire service, news agencies and other reliable sources, may be accepted as preliminary.

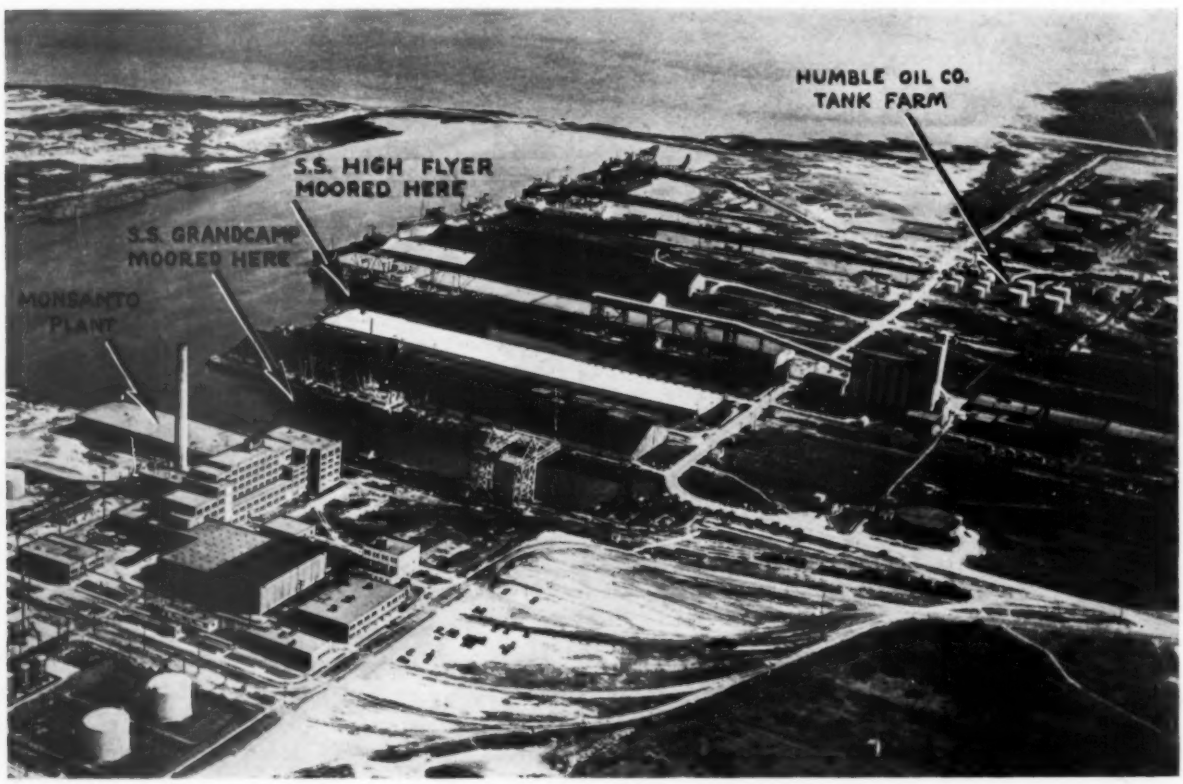
AT about 9:12 A.M. on April 16 the nitrate-laden freighter Grandcamp blew up on the waterfront of Texas City, Texas, setting off a chain of explosions and fires.

The exact loss of life will probably never be known but at this writing the known dead are listed at 433 by Mayor C. Trahan and the missing given as 302 by the State Department of Public Safety. The number of injured ran into the thousands. The property loss is estimated at from $50,000,000 to $125,000,000.

The tragedy virtually wiped out most of the dockside facilities and industries in the thriving war-boom city of 16,000 people on Galveston Harbor, destroying, in addition, three freighters and their cargoes, over 500 railway cars and 1,500 motor vehicles. More than 1,200 families were made homeless by the explosions, which also did serious damage to business and public buildings.

At the same time, the holocaust set a new record of fatalities for the fire service of the country, when the initial explosion killed over half of the city's volunteer fire department of forty-seven officers and men, and wiped out its entire fire fighting equipment.

Before proceeding into the causes and results of the explosions and fires, it would be well to review the scene of the disaster and the events leading up to it.



Air View of Waterside Area at Texas City, Tex., Taken Shortly Before Devastation by Explosions and Fire

Indirectly, the Texas City tragedy is the outcome of the recent World War. Informed persons say that the explosions and fires occurred in one of the greatest concentrations of hazardous industries in Texas, if not in the entire South. And this concentration is, for the most part, a development of the war.

Texas City, in addition to being heavily industrialized, is a major shipping center. It is located on the mainland, across Galveston Bay from Galveston, eleven miles from the Gulf of Mexico. Its outer harbor is shared by that city. The harbor is 800 feet wide and over five miles long, extending from the Gulf between two protecting breakwaters to Bolivar Roads, the terminal of Texas City, Galveston and Houston ship channels. Texas City is also an intersection of the intracoastal canal.

Texas City itself, spurred by wartime activity, grew in population from a small community to a municipality of about 16,000 persons. Its industries and shipping facilities are crowded for the most part within a mile square area lying south and southeast of the city proper. The concentration included, in addition to the Monsanto Chemical Company's vast plant, six major industrial properties and a number of other enterprises of lesser magnitude. The kernel of these industrial properties is the Texas City Terminal Railway Company, with its tracks, warehouses and railroad and dock facilities. All told, the properties represent an investment of over $125,000,000.

Most vulnerable of all the city's industries to a waterfront explosion was the Monsanto Chemical plant, which had in progress at the time of the disaster a $1,000,000 expansion program, including additional facilities to produce polystrene, a chemical basic in the production of plastics. The plant, completed by the Government in 1943 at a reported cost of $18,900,000, was sold to Monsanto by the War Assets Administration last August. It was built to make styrene, an important ingredient in synthetic rubber manufacture. Styrene is processed from propane, which is a product of recycled gas, and benzine. It had a reported capacity of 62,000 tons of styrene daily and had been operating with two shifts. It is reported that the Monsanto plant had been erected upon sixty-foot piling to give it foundation in the low lands which it occupied, projecting into the Bay just south of the poorer residential district of the city. This construction is said to have been at least a partial factor in the plant's destruction, following the ship blast.

Directly south of the Monsanto plant, along the waterfront, are six piers, connected by spurs of the Terminal Railway Company. These piers varied in length from 750 ft. to 1,160 ft. and in width from 100 ft. to 157 ft. They were occupied by the usual one-story pier shed with the exception of Pier B, the longest in the group, which had a two-story structure. Lying between the Monsanto property and the northernmost pier was the "North Slip." Here were located the loading facilities for the recently resumed sea-train service between Texas City and New York. This service, abandoned during the war, had been reinstated only recently, the ships carrying entire railroad trains of up to forty freight cars between the two ports. On the north side of the slip, between the Monsanto plant and Terminal properties, is the gigantic crane used in handling cars.

The freighter S.S. Grandcamp was located on the south side of this slip at the time of the fire. The S.S. High Flyer and the S.S. Wilson B. Keene were located in the "Main Slip" between Piers A and B, the latter to the south. This slip was about in line with the on-shore string of Terminal warehouses and the huge grain elevator.

Located inland, or west of the Monsanto plant, about six blocks from the shoreward plant boundary, are the properties of the Atlantic Pipe Line Company and Stone Oil Company. To the south of them, and along the Galveston-Texas City Highway, is the property of the Republic Oil Refining Company, and west and southwest of its considerable oil storage farms is located the vast Pan-American Refining Corporation.

In the area directly south of the Terminal Railway Company's yards, warehouses and other properties, including the grain elevator and handling plant, are extensive refineries and oil storage farms of the Southport Republic Terminal (formerly the Continental Oil Company); The Humble Pipe Line Company (Humble Oil and Refining Company); additional properties of the Republic Oil Refining Company; and the Southport Petroleum Company.

The remainder of the city's large industrial plants were less vulnerable to a waterfront explosion. They are located north of the city and across it from the bayside. The great Pan-American Refinery, shown on the diagram, is between a mile-and-a-half and two miles from the waterside. Adjacent to it, and still further away from the waterfront (not shown on the diagram) is the gigantic plant of the Carbide and Carbon Chemicals Corporation, which has currently been active in a $16,000,000 expansion program. Approximately three miles further southwest is the only tin smelter on the American Continent, that of the Tin Processing Corporation.

Although all construction details are not available, it is reported that the wharfs and warehouses in the Texas City Terminal Railway area were about 40 per cent fire resistive. The warehouse contents, on the other hand, were combustible and, in some cases, highly so. The oil and other flammable liquid tank facilities of the chemical and oil companies were reported generally to be designed, constructed and protected in accordance with the established safety practices of their respective industries. It is doubtful, however, if the builders ever envisaged these facilities being exposed to the destructive blast conditions that wrecked or damaged them.

As is indicated by the diagram and pictures, the hazardous facilities were for the most part so situated and condensed in the mile-square area, as to present dangerous group vulnerability. Their general proximity to the residential and business areas of the city constituted an additional threat.

The set-up was made-to-order for the catastrophe.

The Texas City disaster was the worst in point of firemen killed ever experienced in the history of the nation's volunteer fire service.

On the morning of the discovery of

Air View Indicating Areas Involved by Fire

the fire in the Grandcamp, the Texas City Volunteer Fire Department numbered forty-seven members, all volunteers except the drivers, who were paid men. Three days later only twenty were left alive, according to current information.

Twenty-seven members of the department responded to the initial alarm of fire shortly after 8:00 A.M., April 16. Aided by members of the crew and dock workers and by some members of local oil refinery fire brigades, the four pieces of apparatus were manned, lines stretched to the dock and aboard the burning freighter.

Fire Chief H. J. Baumgartner, for many years volunteer head of the fire fighters, was early at the scene, he being an employe of the Terminal Railway Company and his office being located right at the docks. Also directing the fire fighting operations were First Assistant Chief Joe M. Brady and Captains S. B. Numez and W. G. Johnson.

Not one of these men survived the blast that disintegrated the ship and set off the chain of explosions which devastated the port. With them into eternity went all the others who were aiding the volunteers. At this writing, of the twenty-seven known firemen dead or missing, only one body has been located and identified.

At the beginning of the fire, the Texas City Fire Department had four pieces of fire apparatus. The explosion destroyed all four units. Friday, following the fatal blast, the wrecked remains of two trucks were found, one fantastically intermingled with sections of the torn freighter, all piled atop a barge, many feet from the dockside. Of the other two department units, not a trace remained.

Providentially for him, Fred Dowdy, Second Assistant Chief, was out of the city at the time of the tragedy and became the only surviving officer. On Friday, April 18, he was named Acting Chief. On that day, five of the twenty survivors worked silently around the almost new firehouse to repair the blast damage. Soon after, when U. S. Army surplus fire trucks came rolling into the city, the survivors had their ranks strengthened by substitutes.

Paradoxically, the very immensity of the calamity speeded the relief to the stricken community. No sooner had the first flash of the tragedy been sent out over the reported single telephone line left in service after the initial explosions, than the radio world was given the news through the commercial broadcast stations and networks. Fire and police municipal short-wave radio carried the initial calls for help to surrounding areas and before nightfall on the 16th, the vast and complicated machinery of aid and relief was in motion.

Fire and Police Departments from the Gulf Coast cities in a 100-mile radius rushed in to help. From an airplane, observers could see fire trucks speeding toward Texas City, mostly coming from the direction of Galveston. It is reported that many communities dispatched firemen and policemen without waiting any direct calls for help.

Hard on the heels of the emergency services came the relief agencies. Governor Beauford H. Jester of Texas flew to the area to personally direct these efforts. Rescue workers, doctors, nurses, hospital corpsmen arrived in every form of conveyance. Aiding the State of Texas were the Armed Services, the Red Cross and veterans organizations. The Fourth Army sent aid from San Antonio; the Tenth Air Force was named coordinator of transportation, rushing planes to St. Louis to pick up 12,000 pounds of blood plasma. Two other army planes from Bergstrom, Texas, were loaded with 8,750 pounds of plasma. The Eighth Naval District rushed doctors and other personnel from New Orleans. A chemical officer brought 500 gas masks from San Antonio, to assist rescuers in entering gas charged areas. From Fort Worth came 10,000 blankets by plane. Medical aid poured in by air from cities all along the state's scheduled airline routes. The Governor alerted two battalions of Texas State Guardsmen at Houston to add 400 men to the 150 State Troopers who quickly moved in from nearby Laporte. All told, there were over 1,500 law-enforcement personnel, including guardsmen, police, Texas rangers and sheriffs reported in service.

The Texas Highway Department moved in tractors, bulldozers and other wrecking equipment.

The Coast Guard rushed a half dozen boats through Galveston Bay to Texas City and also set up a radio communications truck.

From Corpus Christi came an airplane carrying five doctors, five nurses, two Navy pharmacists mates and a load of supplies including morphine and blood plasma. The Red Cross flew in a plane-load of gas masks from Ellington Field, near Houston. Medical supplies, including whole blood, plasma, tetanus and gas gangrene antitoxin, came from St. Louis.

The Navy put a 700-bed hospital at Houston and a 500-bed hospital at Fort Crockett, near Galveston, in the hands of the Red Cross. The latter organization also flew in disaster personnel and funds. Two-way radio communication was maintained between the disaster chairman of the Freeport Chapter at the scene, and Red Cross Midwest area headquarters in St. Louis.

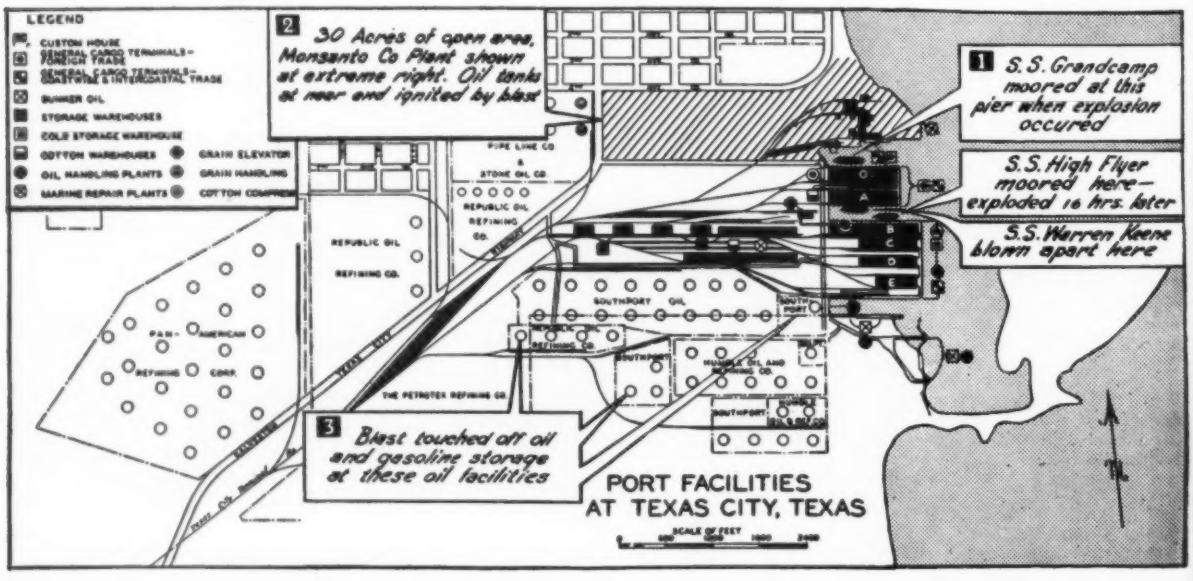
Early, teletype communications were installed between the stricken city and Dallas. Striking telephone workers were ordered back to work in the emergency but some press accounts state they resumed their striking before the emergency was declared over.

In Washington, the Federal Communications Commission cleared air channels for emergency radio communications with the blasted area. Government experts in gas and explosion control and relief were sped to the scene.

The Water System Partially Fails

The water supply system for domestic and fire fighting use in Texas City was considered adequate for normal demands. Water is provided by wells.

The Terminal had its own supply, consisting of two elevated water-tanks each of 10,000 gallon capacity and a 300,000 gallon reservoir. There was a pump-house located about 900 feet from the scene of the explosion. Although of fire-resistive construction, it was flattened by the blast which put the entire Terminal system out of commission,


LEGEND
CUSTOM HOUSE
GENERAL CARGO TERMINALS – FOREIGN TRADE
GENERAL CARGO TERMINALS – DOMESTIC & INTERCOASTAL TRADE
BUNKER OIL
STORAGE WAREHOUSES
COLD STORAGE WAREHOUSE
COTTON WAREHOUSES
GRAIN ELEVATOR
OIL HANDLING PLANTS
GRAIN HANDLING
MARINE REPAIR PLANTS
COTTON COMPRESS
2 30 Acres of open area, Monsanto Co Plant shown at extreme right. Oil tanks at near end ignited by blast
1 S.S. Grandcamp moored at this pier when explosion occured
S.S. High Flyer moored here – exploded 16 hrs. later
S.S. Warren Keene blown apart here
3 Blast touched off oil and gasoline storage at these oil facilities
PORT FACILITIES AT TEXAS CITY, TEXAS
SCALE OF FEET
FIRE LINE CO & STONE OIL CO
REPUBLIC OIL REFINING CO.
SOUTHPORT OIL
THE PETROTEX REFINING CO.
HUMBLE OIL AND REFINING CO.
SOUTHPORT

and led to reports that the city's supply had failed.

The pump-house of the Monsanto Chemical plant was also rendered useless by the initial blast. Water failure also made it impossible to use foam in fighting the fires in storage tanks of the Humble and Carbide plants.

It is reported the majority of the wharfs and warehouses in the Terminal area were unsprinklered and that where they were, the piping was ruptured by the explosion and there is no evidence to indicate that any sprinklers operated.

Fire apparatus responding to appeals for help were unable to secure adequate water for several days until the dock area had been cleared to permit approach for drafting from the bay. Fires were still burning in the warehouse and tank areas three days after the second explosion. Many burned themselves out because of the impossibility of effectively combating them, due to lack of water and/or foam equipment.

For a short time it was believed the city's domestic water was contaminated and warnings were issued not to use it, and fresh water was brought into the city by plane and truck. Restrictions were soon lifted, however, when it was found the water was potable.

Nature of Injuries Analyzed

Four days after the initial eruption, the Red Cross medical disaster directors issued a report on the nature of the injuries from the explosions.

This indicates that those in buildings at the time of the major explosion, in the nitrate-laden Grandcamp, suffered mostly from glass and splinter wounds and those in the open, from compound injuries caused by the blast effects.

The report stated that head injuries caused many deaths, that burns were few,* that there were many ruptured eardrums.

The report said that it had been found in the emergency work on the scene that the military program of catastrophe management as developed during the war was very adaptable to civilian disasters.

Waterfronts Guarded

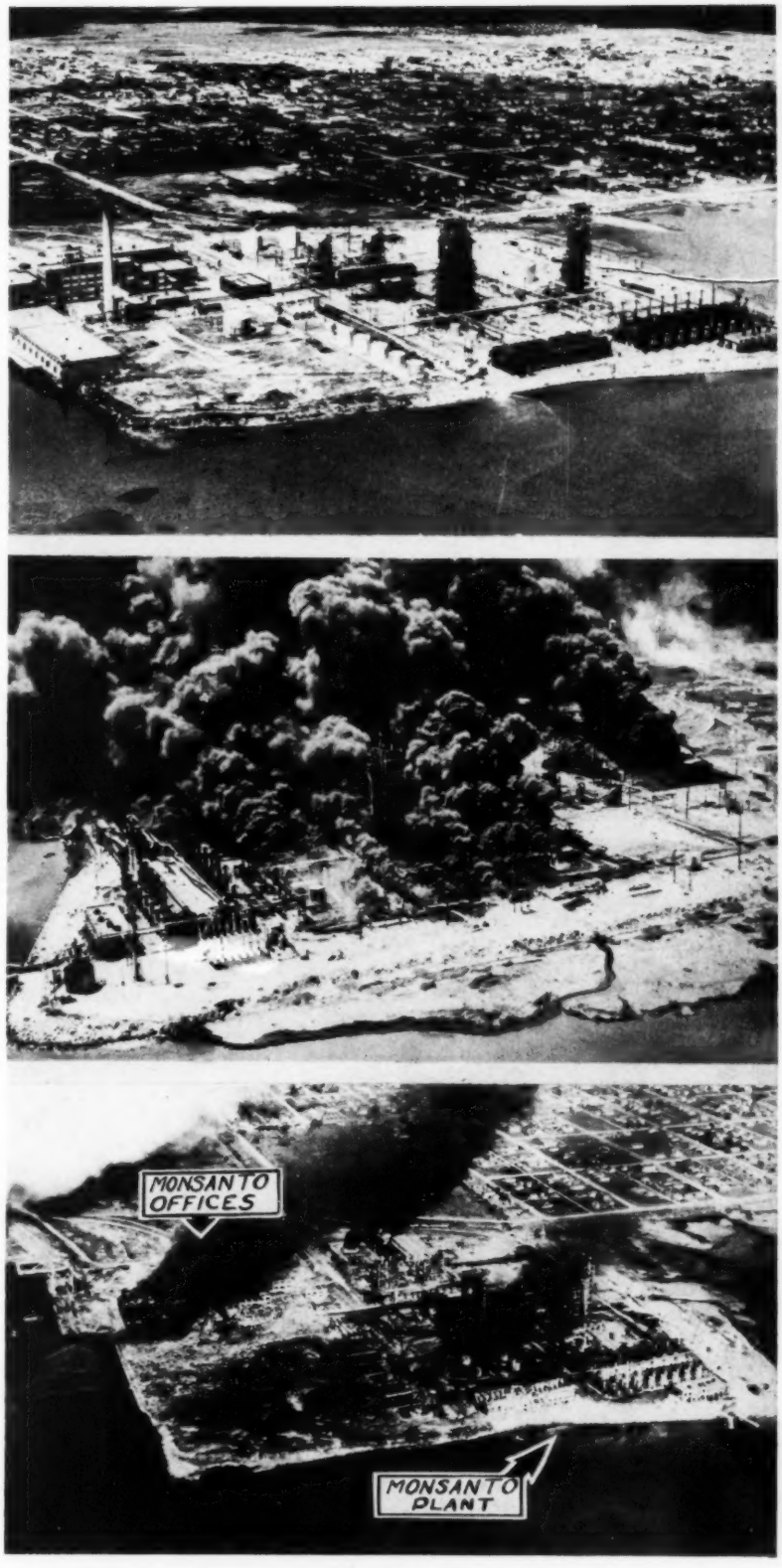
The fate of Texas City immediately resulted in a check up and an overhauling of area hazards, particularly those at shipping ports, throughout the nation. It is known that huge stocks of ammunition containing amonium nitrate were left at the end of the war and that these stocks are being reprocessed and reconverted for use as fertilizers.

Explosive experts attending the meeting of the American Chemical Society at Atlantic City the week of April 13 pointed out that until the processing of the nitrates is completed, the danger of explosions will remain a real one.

Loss May Reach $125,000,000

The Texas City disaster may result in the second greatest insured loss in the history of underwriting. Although accurate estimates of the Texas City dam-

*This statement no doubt refers to the number of burns in relation to the vast number of injuries. Medical and press accounts, however, stress the burned condition of many bodies.



The Destruction of the Monsanto Chemical Company Plant at Texas City

Top: The plant as it appeared before the explosion and fire, Texas City is shown in the background.
Center: Shortly after the blast, fire quickly enveloped the plant.
Bottom: Complete destruction of establishment, with fires still burning in office building (left) and tanks (center).

age will not be available for some time, it is reported the minimum total insurance loss under property damage forms is expected to reach $50,000,000, according to Donald B. Sherwood, general adjuster of the National Board of Fire Underwriters. He reports that 10,000 claims are expected to be filed. He places industrial loss at $35,000,000 and explosion claims at 7,500, amounting to about $4,000,000. The number of automobiles destroyed was set at 1,000 to 1,500, for a total loss of about $500,000. Claims outside of Texas City will be small, it is said.

To these estimates must be added the considerable sums that will be paid on life insurance and accident and injury policies, and in workmen's compensation. Marine insurance may be involved, also, in the loss of the three steamships. Life insurance payments may run as high as $1,300,000, in addition to what some companies are paying out to families of deceased employes.

The largest single loss in the history of underwriting was the 350-million-dollar property damage suffered in the 1906 San Francisco earthquake and fire. The dead numbered 452 in that catastrophe.

No estimate of the Texas City uninsured loss is forthcoming at this time.

Effect on Nation's Economy

Even as the devastated city struggled to regain a semblance of normal life, the reverberations of the tragedy reached deep into the nation's economy. These results of the catastrophe seem certain:

Federal (and possibly state and other) rules on the shipment and handling of ammonium nitrate are certain to be overhauled and revised.

There will either be new restrictions set up to prevent the concentration of chemical and other hazardous industries and enterprises, or new safeguards will be insisted upon for present hazards.

A higher degree of cooperation and coordination between municipal fire services and both the hazardous industries and those whose duties it is to provide regulatory safety measures will eventuate.

Some chemical and petroleum refining plants will have to reschedule operations to offset losses at destroyed and damaged plants.

Grandcamp Arrived April 11

The freighter Grandcamp, a former Victory ship, under French registry, arrived at Texas City about noon on April 11, according to Samuel F. Muecke, Deputy Collector of Customs at Galveston, and was docked in the "North Slip," north of Pier "O." Almost immediately it began taking on a cargo of nitrate in its No. 2 and No. 4 holds.

According to the ship's manifest, which listed only items taken on before arrival at Texas City, there were in the cargo sixteen cases of small ammunition as well as tobacco, twine, a small amount of gasoline and paint. It was said that the small arms ammunition had no connection with the explosion. It had been loaded at Antwerp for Venezuela but had been overshipped and had missed port. It was to have been transferred to another vessel and was stowed between decks at the time of the fire.

On the morning of April 16 the Grandcamp is said to have been loaded with approximately 2,300 tons of ammonium nitrate, in addition to the beforementioned cargo. Documentary evidence placed before the Coast Guard Board of Inquiry shows that this ammonium nitrate was all shipped by rail from three points: The Iowa Ordnance Plant at Burlington, Iowa; Cornhusker Ordnance Plant at Coplan, Neb., and the Nebraska Ordnance Plant at Firestone, Neb.

The substance was packed in 6-ply paper sacks of 100-lb. capacity and was transferred from the boxcars in which it was shipped, into the vessel, by the Texas City Terminal Railway Company. At the time of the explosion a number of boxcars on the wharfs contained various amounts of the product and it is considered one of the oddities of the disaster that, following the blast, some quantities were found undamaged at varying distances from the dockside Samples of these residue were taken by government experts for analysis.

Other Freighters Nearby

Located in the "Main Slip," south of Pier "A" about 350 feet south of the S.S. Grandcamp on the morning of April 16, was the freighter High Flyer. Across the same slip, at Pier "B" was another freighter, the Wilson B. Keene.

The testimony of Captain R. M. Peterman of the High Flyer indicated that his ship was loaded with 961 tons of ammonium nitrate fertilizer compound in addition to other cargo. It was not indicated whether or not this was the same substance as that in the Grand Camp. It is not reported what the S.S. Wilson B. Keene contained, but it is understood to have been wheat.

Captain Peterman testified that during the war the High Flyer had carried several loads of ammonium nitrate to Europe from Boston and New York without mishap. This had been packed in red bags lettered "Danger! Explosives!" He was aware that his cargo

As the Texas City, Tex., Fire Gained in Intensity

Above: A couple of minutes after the S.S. Grandcamp blew up, isolated fires burn over a large area. At extreme left is the Monsanto plant, and at extreme right fire has reached a tank of the Pipe Line Co. and Stone Oil Company.

Below: About ten minutes after above picture was taken, note almost complete involvement of Monsanto plant, and extension of fire among oil tanks. Tanks shown in center of picture are of the Humble Oil Company. These were later involved.

contained ammonium nitrate but he had believed it was a different compound from the wartime chemical.

Earlier testimony before the Board indicated that the markings on the fertilizer chemical being loaded in the Grandcamp and the High Flyer gave no indication that the compound was explosive.

W. H. Sanberg, vice-president of the Texas City Terminal Railway Company, who was severly injured in the explosion, testified that while between 75,000 and 80,000 tons of ammonium nitrate had been shipped out through his facilities since last year, he never knew that the material was dangerous or required special handling and had never received any instructions from the manufacturers or any government agencies for special handling.

Smoking Was Countenanced

Evidence of a number of witnesses, including Ben Papham, Jr., second mate of the High Flyer, indicated that personnel both on the Grandcamp and the High Flyer were smoking cigarettes on the day before the blast. L. D. Boswell, foreman of a crew of nineteen longshoremen, which loaded ammonium nitrate into the Grandcamp, said that he had observed smoking on that ship. His crew closed the hatch which the ammonium nitrate was being loaded into the Grandcamp at 5:00 P.M. Tuesday, the day before the explosion, and reopened it at 8:00 A.M., about an hour and a quarter before the blast, to resume the job of loading.

Ammonium Nitrate Unpredictable

That the ammonium nitrate cargo of the freighter Grandcamp was the source of the explosion and that this, in turn, was accelerated by the heat of the fire in the cargo has been determined. But just what caused the chemical fertilizer to detonate is what is at present puzzling the experts.

There is plenty of evidence to attest the explosibility of ammonium nitrate, but its wide use and application, particularly during World War II, without serious results, and the general looseness in regulations for its handling, storage and transportation, undoubtedly had lulled even those most familiar with its potentialities for evil to a false sense of security.

Pending tests of the particular compound that caused the tragedy, under conditions that approximate the same reaction of heat upon this particular grade of nitrate cargo on the Grandcamp, it is idle to advance any theory of the cause. However, it is in order to say a few words about ammonium nitrate in general.

It is understood that it was the intention to transform the Grandcamp's cargo of ammonium nitrate into fertilizer and it is said that the nitrate which was in a finely granulated form, had been treated with some petroleum product to prevent its caking.

One method of so transforming ammonium nitrate is to dilute it with ammonium sulphate. But the mixing on a fifty-fifty basis would have to be done carefully and thoroughly. Because this was not done carefully and thoroughly at Oppau, Germany, in 1921, some 4,500 tons were deflagrated with a loss of 430 lives.

Note this term "deflagrated," which

Wreckage Following Explosion and Fire at Texas City, Tex.

Top: Dock and railroad yard area after the explosion. Some freight cars still burn.
Center: Shortly after blast. Slightly injured are being led from blast area.
Bottom: Parked cars some distance from the dock area show effects of terrific blast.

Wreckage of the S.S. Wilson B. Keene, Cut in Two and Sunk Alongside Her Pier by the Second Explosion Involving a Freighter, Gives Mute Evidence of the Violence of the Blast

is something different from "exploded." A deflagration is an incomplete explosion which does not yield the usual nitrogen, carbon dioxide, water and carbon monoxide. At Oppau, the ammonium nitrate had been mixed with ammonium sulphate and the mixture had been stored in an enormous bin. Ammonium nitrate cakes easily, so that the mixture formed hard, large masses, which workmen blasted into smaller masses with a pound or two of explosive. Some 30,000 "shots" had thus been fired without mishap. One day a worker overcharged a bore hole—so the theory ran—and the improperly prepared mixture was set off. There was a deflagration of the entire 4,500 tons.

Many explosives are compounds of nitrogen, and so are fertilizers. For this reason, a chemical plant that makes explosives is also able to make fertilizers. In addition to nitrogen, most explosives also contain carbon and hydrogen. TNT, nitroglycerine and nitrocellulose (guncotton) are examples.

It is difficult to make nitrogen combine with any other element. Even when such combinations are achieved, they are usually unstable in that the nitrogen tries to break away. It is this instability that makes it possible to produce an explosive at all. Give TNT, ammonium nitrate or any other high explosive, the proper "kick" and the nitrogen-containing molecules fly off violently and generate much gas and heat. In contrast to ammonium nitrate, some compounds such as lead or mercury oxide or nitrogen trichloride or nitrogen tri-iodide are so sensitive that even friction is enough to set them off.

Ammonium nitrate is so stable that it is easy to forget its potentialities as an explosive. Because it is so insensitive, chemists have used it as an ingredient in high explosives.*

The Initial Explosion

First evidence of fire in cargo of the Grandcamp was discovered by one of the crew's nineteen longshoremen. A short time after opening No. 4 hatch about 8:00 A. M. on the 16th, one of the longshoremen reported he smelled something burning. A companion investigated and said it was coming from No. 4 hold and he asked for some water. According to testimony, while they were preparing to put water on the fire someone ordered the longshoremen not to use water because "it would damage the cargo." The longshoremen's foreman told the Board that he was ordered to close the hatch and his men moved up on deck. He said that he in turn later told his group of men to leave the vessel after he had seen the hatch raise up. He said this latter event occurred after he had observed some of the French ship's crew members covering the ventilator to the hold.

Further evidence on the location and extent of the fire was given by W. K. Thompson, a member of Mr. Boswell's crew. He helped uncover the hatch of No. 4 hold and descended into the hold at 8:10 A. M. to discover clouds of smoke. He and other longshoremen started to climb out of the hold but decided to determine the extent of the fire. "I climbed over into the inshore side of the ship and looked down," Thompson said, "I saw flames burning below the nitrate. I couldn't tell how much fire was in the hold. We went down to the bottom and removed three or four sacks of nitrate. The flames burst out when the sacks were removed."

Thompson said he took two fire extinguishers and two small jugs of water into the hold and the men attempted to put out the fire with these. "They had no effect whatsoever," he said. "Boswell called down and ordered us topside. We went up and after all eight of us were out of the hold, we covered the hatch. Boswell told us to get out of the ship."

Testimony of the six or seven surviving crew members of the Grandcamp indicate that an effort was made to use live steam on the fire but there is no evidence of any concerted attempt to use the ship's fire mains. This may have been due to extensive mechanical repairs which some reports indicate were being made at the time. Whatever the conditions, the fact is clear that from approximately 8:30 to 9:17 A. M. the time of the explosion, the fire was allowed to increase in intensity below decks, except for the efforts of the Texas City Fire Department, which were so tragically interrupted.

Edward Westman of Galveston, representing the owners of the Grandcamp, testified that he had been notified at 8:30 A. M. April 16, that a fire had broken out on the ship. He said as soon as he was notified he called the Bay Towing Company and asked them to rush two firefighting tugboats to the scene.

Just who summoned the local fire department has not been disclosed, but twenty-seven men responded, with four pieces of equipment. They were joined by almost as many other firefighters from the Republic plant's fire brigade. This force, undaunted, and further aided by dockworkers and other helpers, were getting lines into operation aboard ship, as well as from the dock, when the blast came and the ship disintegrated.

According to Mayor George W. Frazer of Galveston, that city sent its fireboat, the City of Galveston to Texas City "when the French ship Grandcamp was ablaze—this was before the explosions began." It was providential that the fireboat with its Galveston firemen was not yet operating on the ship when the blow came.

Meanwhile, reports of the fire, and the growing column of black smoke arising from the vessel, had attracted a large crowd of spectators. Practically all of these persons, as well as all the firefighters, and most of the workers in the immediate blast area were killed or seriously injured. Some of the injured doubtless died when they were caught, hours later, in the explosion of the freighter High Flyer.

Destructiveness of First Blast

The incredible force of the explosion, as the Grandcamp disintegrated, is attested by the destruction wrought in the area. Photographs of the column of smoke arising from the explosion liken it to the Bikini atom blast. Ex G-I's who underwent the worst of what the Germans had to give, said they had never seen anything as destructive.

The detonation was felt 100 miles distant. In Galveston, across the bay people fled their homes believing an earthquake had struck. Windows were shattered, houses shaken and plaster fell as far as twenty miles away. The concussion knocked a small airplane out of

*_Ammonium Nitrate._ Ammonium nitrate is produced by passing ammonia into nitric acid. It is more deliquescent than the sodium salt. Ammonium nitrate is more hazardous than either potassium or sodium nitrate as, in addition to its hazard from contact with organic or oxidizable matter, it decomposes at a moderately low temperature. When heated to 210 deg. C., it breaks up into water and nitrous oxide, which is a supporter of combustion. In contact with glowing carbonaceous matter, it at once reacts, often so violently for the reaction to be considered an explosion. It is very soluble in water. Its fusing point is 152 deg. C. Whether or not ammonium nitrate is to be considered an explosive is a matter that has aroused some controversy, it being considered by some that, when confined and compressed, and a sufficiently powerful detonator used, it must be taken to be an explosive. The explosion so initiated, however, does not propagate readily. Ammonium nitrate, however, is an ingredient in many explosives.—*From CHEMISTRY IN RELATION TO FIRE RISK AND FIRE EXTINCTION.—A. M. Cameron.*

the sky, killing its two occupants. Dockside structure disappeared. Fragments of the ship—some weighing several tons each, were scattered hundreds of feet distant. Smaller portions of hull and superstructures were thrown as far as two miles. Some of these fragments tore automobiles apart, ripped up long deep gashes in yards and pavements, and even pierced quarter-inch steel plate.

A 75-ft. steel barge, moored near the Grandcamp, was lifted and thrown ashore, intermingled with parts of the Grandcamp; on top of the whole, was the shredded remains of one of the fire department's pumpers. Unburned portions of the ship's cargo were scattered considerable distances.

Some members of the crew of the freighter High Flyer berthed two docks away, watching the fire on the Grandcamp, were killed by the concussion.

Monsanto Takes Full Force of the Blast

The war-plant of the Monsanto Chemical Company, about 500 feet from the pier, felt the full impact of the thrust by air concussion and flying fragments, by ground wave, and by ground swell of the waters from the bay which inundated the low land upon which the plant was built.

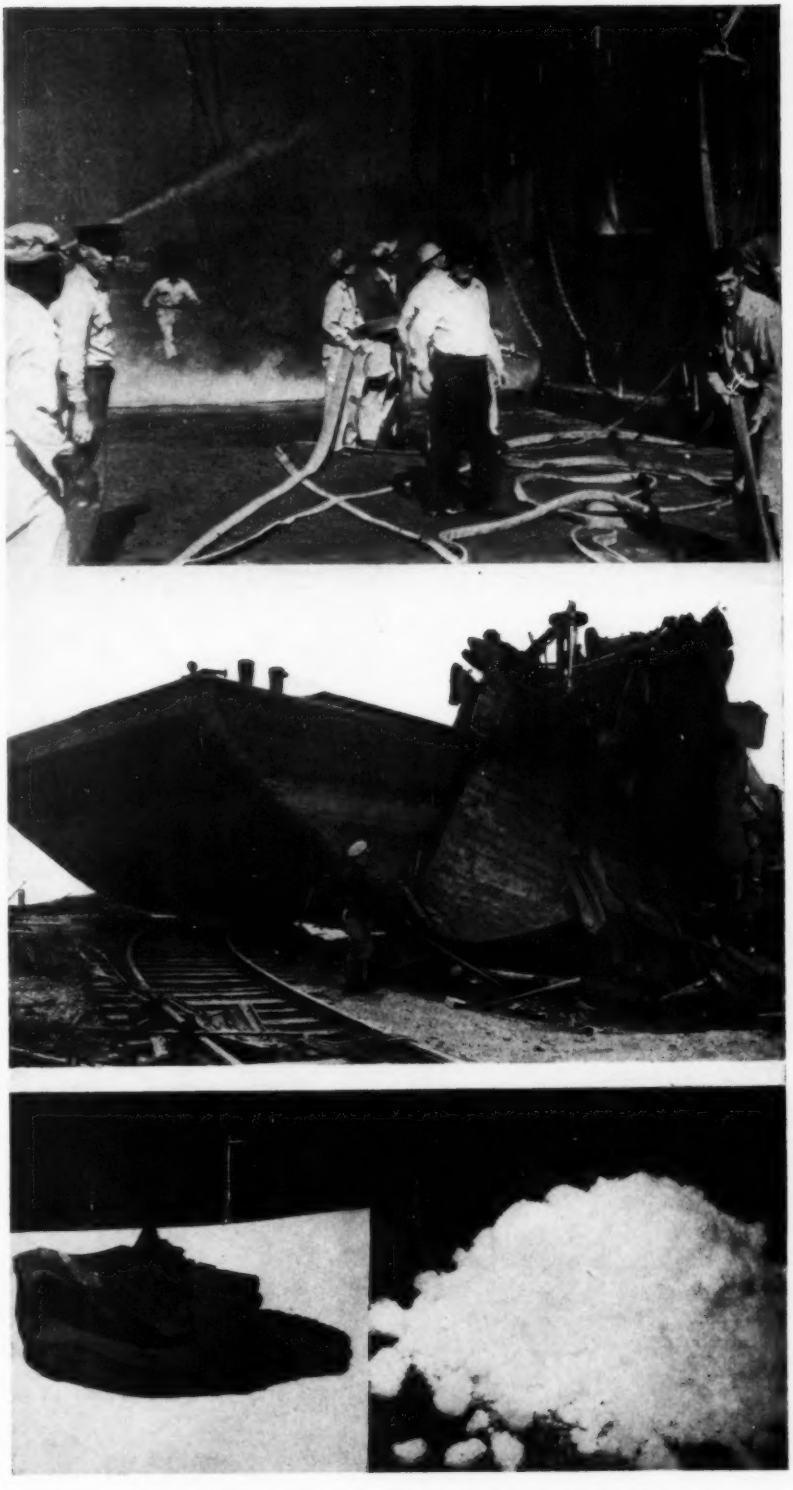
Unconfirmed early reports attribute the concurrent explosions in the Monsanto plant to the fact that it had been built on sixty-foot piling and that styrene manufacture requires close temperature control and pressures of 1,000 PSI. The shocks and ground swell of the Grandcamp explosion it was said caused the Monsanto plant to vibrate violently upon its foundation, which in turn ruptured fittings carrying pressures from one operating unit to another, resulting in the explosions and fires, causing additional casualties among the reported 450 workers at the plant.

The reports of Monsanto workers who survived the initial explosion agreed that the ground appeared to wave immediately, following the concussion. Whatever the cause, about two minutes after the initial shock, fires broke out at different locations in the Monsanto installations, spreading with increasing fury, upopposed by firefighters.

Although the large fractionating towers and certain other distillation equipment withstood the impact of the blast, they were so badly damaged it, is said they will require replacement. The company's office building, formerly a large sugar warehouse, the large cafeteria, warehouses and other structures, were either completely wrecked, or extensively damaged. The plant's pump house was reported crushed and the water system ruptured, preventing the fire-fighters from using foam in their later efforts to extinguish remaining fires. Fires were still burning in the fractionating towers and in a benzol storage tank on the fourth morning following the explosion. Although several propane tanks survived the shock, most of the plant's piping, largely steel, was ruined by the blasts and fire.

Almost half of the Monsanto's employes at work at the time of the explosion were dead or missing and the balance were injured, many critically. Some workmen of a construction company engaged in the area were also killed or injured.

(Continued on page 314)



Some Pictures of Unusual Interest, in Connection with Ship Blast

Top: Firemen and longshoremen going into operation on fire in S.S. Grandcamp. Here lines are being laid out on pier prior to advancing into steamer. About five minutes after this picture was taken, the blast occurred. Photograph was taken by ship's officer, who thereafter stepped ashore, and escaped with his life.

Center: The crumpled wreckage of a fire truck rests atop a broken barge which was blown ashore by the S.S. Grandcamp explosion.

Bottom: (Left) Fragment of steel plate from S.S. Grandcamp. (Right) Ammonium nitrate, with which the ship was loaded. (Photo by U. S. Coast Guard.)

Navy Base Fire Shows Hazards Of Rambling Wood Structures

Although Supposedly Fire-Stopped, Huge Treasure Island Frame Building is Razed by Blaze

By BOB GREENOCK

FIRE of conflagration proportions, which threatened to sweep the Treasure Island Naval Station in San Francisco Bay on April 10, did damage estimated conservatively at $500,000 and threatened radar and electronics equipment valued at between $35,000,000 and $40,000,000 as well as millions of dollars worth of installations and other equipment before it was controlled after a four-hour fight by the greatest concentration of fire apparatus and fire fighting manpower ever employed in the Bay Area.

Forty-one men, including seven San Francisco firemen and 29 Navy and Marine personnel, as well civilian members of the Treasure Island Fire Department, suffered injuries, none of them serious.

Chronologically, the fire began some time before 3:48 P.M. on Thursday, April 10. At that time one of the thousands of Navy and Marine personnel on the island, man-made for the Golden Gate International Exposition in 1939, discovered smoke pouring from a galley that had serviced the largest mess hall in the world, and pulled T. I. Box 255.

To this alarm two engine companies, a hose tender, a 75-foot aerial truck responded, under command of Chief James V. McKenna of the Treasure Island Fire Department.

Chief McKenna, a retired captain of the San Francisco Fire Department who served in that department's assignment office for some time before retiring, upon arrival at the scene immediately instructed his operator to sound a general alarm for the island and to pull (at 3:50 P.M.) San Francisco Box 2931 on the island. At the same time, a request was made to Oakland for a second alarm assignment, followed by requests to other naval installations in the Bay Area for help.

As the Treasure Island Fire Gained Headway. Note the Length of Huge Frame Structure Involved

The original box (255 at Fourth and Avenue C) brought in the aerial, a 1250 gpm pumper, a 750 gpm pumper and a hose tender carrying 2000 feet of 3½-inch hose. The general alarm for the island brought in another 1250 gpm pumper, another hose tender with 2000 feet of 3½-inch hose and the Yerba Buena Island pumper of 750 gpm. Yerba Buena Island, for years a naval installation, is roughly a half-way anchor for the Bay Bridge and is connected with Treasure Island by a man-made causeway. It has its own alarm system but is connected by telephone with the T.I.F.D. and is under jurisdiction of Chief McKenna.

Later, the T.I.F.D.'s reserve equipment, some of it forced into the "stand-by" class because of cut in fire fighting personnel, was brought to the scene. It consisted of one 1250 gpm pumper, one 500 gpm pumper with booster tank, a city service truck and four 500 gpm trailer pumps, towed to the fire by T.I.F.D. pickup trucks.

The fire started from causes unknown in a huge L-shaped building, each part of the L being approximately 1000 by 200 feet, and about 50 feet high, constructed of wood and stucco and reported to have six layers of tar paper on its roof.

The fire began in Building 137, also known as Barracks K, which served as the Foods and Beverages Building during the fair. It quickly spread eastward into the former Festival Hall, called Building 118 by the Navy, and around the L through the bakery (formerly an entrance to the Food and Beverage Building and the Vacationland Build-

Spread of Fire in the Treasure Island Building Was Extremely Rapid. Here Are Shown Several Streams in Operation, While Additional Lines Are Being Stretched

ing) and north through former Vacationland, designated as Buildings 150, 151 and 152 by the Navy. The entire structure was under one roof.

The north-south portion of the L was bounded by Ninth Street on the north, Avenue C on the west, Avenue D on the east and Fourth Street on the south. The east-west portion was bounded by Fourth Street on the south, Fifth on the north, Avenue D on the west and Avenue H on the east.

Treasure Island Was the Site of the San Francisco World's Fair in 1939-40. Buildings Were of Temporary Construction. Here Are Shown Two Relics of the Fair, with the Doomed Building in the Background

The heat was so great on Avenue D and Fifth Street that companies were forced to lead in from a block or two away.

Companies from San Francisco, all of which had four miles or more to travel on the first alarm, sped over the bridge to Yerba Buena Island and then by causeway to Treasure Island, threading their way through the bridge traffic. Later, California State Highway police opened a lane especially for fire apparatus.

The fire had a good start before it was discovered. The building had little in the way of fire stops and its contents were old, dry and inflammable. The fact that the portion of the building in which the fire started was reported to have been "secured" by the Navy undoubtedly contributed to the headway made by the flames before discovery.

Chief McKenna reported that the place was an inferno as he rolled from Station 2, several blocks away.

As Assistant Chief Ed Walsh, in charge of the San Francisco first alarm assignment, rolled in, Navy and Marine personnel numbering up to 5000 were swarming to lend a hand to the firemen. Responding to the first alarm were San Francisco Engines 4 and 9; Truck 1, Chemical 8, Fireboat David Scannell, a Battalion Chief (1st District) and Chief Walsh.

Chief Walsh, immediately upon arrival, ordered his operator to pull San Francisco Box 2941 (North Court Warehouse) and then ordered a straight third alarm. Box 2941 was pulled at 4 P.M., just ten minutes after the first alarm and immediately became a vicinity box to which one engine was due.

For strategical reasons, Chief Walsh wanted companies coming in to report to 2941 but in order to strike a multiple alarm from the box, he first had to order it pulled as a vicinity. The straight third alarm was struck at 4:01 P.M., immediately followed by a special call for Water Tower 3, a small tower. A minute later, at 4:02, Water Tower 1, a large tower, was special-called.

At 4:03, Chief Walsh ordered a fourth alarm, Box 2941. Chief Sullivan arrived shortly thereafter and took personal charge. The chief, who was in his City Hall office when the fire broke out, received a telephone call that there appeared to be a bad fire on T. I. His operator, from a different source, received the same information and Chief Sullivan and his operator already were on their way to the bridge approach when the second alarm sounded.

At 4:15, Chief Sullivan ordered a fifth alarm. (For company response, see table at end.) At 4:18 P.M. small Water Tower 4 was special-called. At 4:19, two hose tenders and the second fireboat were special-called and at 4:26 the last two of the city's eight hose tenders were special-called.

A "special" for five engines was sounded at 4:31 and at 5:02 another special for five engines was sounded. This brought the San Francisco engine company response to 32, all of which worked. It was the second time in the city's history that as many pumpers assembled at one location, the first time being at the Standard Oil fire on September 22, 1937, at Box 2362. However, not all 32 pumpers went to work at that fire.

At 5:30 P.M. the 10-3 (recall of the off-shift) was sounded, which automatically invoked the 10-1 and 10-2 signals, cancelling all details, curtailing alarm responses and providing that all motors be kept warm. Under ordinary circumstances the 10-3 probably would have been sounded earlier but with lack of phone service due to the strike, there was not much chance to contact the men who were due to report at 6 P.M. anyhow.

As it was, many officers and men of the department reported early and a number of auxiliaries stood by until 8:30 P.M. when the 10-3 recall was sounded, thus releasing one shift.

In the meantime, Battalion Chief Rudolph Schubert, assigned to the Chief's office for many years and who makes up the alarm box cards, took his usual station at the Fire Alarm Office in Jefferson Park as soon as the third alarm sounded. With a huge, lighted map of the city in front of him showing the location of all companies, he prepared for any special calls for apparatus or cover-in over and above those detailed on the alarm cards which provide for response to five alarms and the necessary cover-in moves.

Before he was through, he had shuffled every engine company in the city and had moved every remaining truck with the exception of Truck 12 in order to provide a maximum of protection with a minimum of companies. Companies which normally don't get into the downtown area excepting to cover-in on a fifth alarm went to the fire, and all outlying companies were moved in.

Engine 22 and Engine 9, the latter a two piece company with a turret mounted on the hose wagon, responded from Oakland. The Alameda Naval Air Station sent a 750 gpm pumper, Tanforan and Hunters Point naval installations sent men and portable light outfits, the Oakland Naval Supply Depot sent two 750 gpm pumpers, a hose tender and a truck company, the Marine Base at Islais Creek in San Francisco sent men and light units and seven fire barges and YTBs of the Coast Guard augmented the waterborne fleet that pumped into mains and laid lines many blocks to the fire.

Chief McKenna of T. I. Fire Department said a check showed 3½-million gallons of water were used in the first hour and forty-five minutes of the fire. The supply for Yerba Buena and Treasure Island is located in four tanks on Yerba Buena Island and represents a capacity of 6½-million gallons. The tanks are fed by a twelve-inch pipeline from Oakland and a ten-inch line from San Francisco.

In the early stages of the fire, huge brands, driven by a stiff breeze, landed on the roof of the gymnasium (formerly the International Building) on the south side of Fourth Street, threatening to involve that building too. The building was only slightly smaller in size than the one destroyed, and was L-shaped also. However, several com-

The Height and Area, Plus Limited Number of Wall Openings in Treasure Island Frame Building, Make the Fire an Exceedingly Difficult One to Combat

panies were shifted by Chief McKenna and they, aided by the arriving San Francisco companies, extinguished that fire after it burned an area on the roof about 100 feet square.

The fire spread so rapidly, jumping hundreds of feet at a time under the roof of the huge structure involved, that water towers and deluge sets had to be moved several times before they could go to work.

At one point, Chief Sullivan questioned the safety of a truck company crew, a battalion chief and about 50 sailors on a section of the roof. He was assured they were safe—the fire could not get past a firestop.

However, the Chief entered the burning structure underneath where the men were working and found flames sweeping past the firestop and into the area directly beneath the men. He ordered the crew off the roof immediately.

The entire complement of men dropped their tools and a line they were using and hustled down an aerial ladder to safety just a minute before the entire section of the roof on which they had been working fell into the inferno below.

A heroic fight was all that saved the building in which the electronics equipment was stored. The building was placed in double jeopardy when, after it appeared firemen had won the battle to save it, the wind shifted and carried burning brands into the huge accumulation of desks, chairs, file cabinets, papers and other office equipment carried onto the grass in front of the building by Navy personnel. A huge bonfire flared up immediately and companies were forced to divert their attention to the new danger.

In addition to the T. I. Fire Department and other companies which responded to the fire which technically was within the city limits, San Francisco sent the following equipment to the fire: pumpers, 32; hose tenders, 8; fireboats, 1; (one was laid up for boiler inspection) trucks, 9; chemicals, 1; water towers, 3; salvage corps, 1; searchlight company, 1; chiefs of battalion, 5; assistant chiefs, 2.

FIRE DEPARTMENT RESPONSE
(San Francisco only)

Time—Signal
p.m.

3:50—Box—2931 E. 4, 9 T. 1 Chem. 8 Fbt. 1 Chfs. A1. 1
4:00—Vic. Box—2941 E. 17
4:01—2-2—2941 E. 35, 2, 6, 1 Hose 1. T. 8, 7 Chfs. 3, 6 Sal. Corps 1
4:01—3-3—2941 E. 29, 19, 10, 27, 28 Hose 4, T. 2, 4, 9 Chf. 11
4:01—2-2-2*—2941 Water Tower 3
4.02—2-2-2 —2941 Water Tower 1
4:03—4-4—2941 E. 7, 14, 34, 16, 31 Hose 8, T. 6, Chf. A3
4:15—5-5—2941 E. 3, 41, 37, 15, 42; Hose 3; T. 13, 3; Chf. 5
4:18—2-2-2—2941 Water Tower 4
4:19—2-2-2—2941 Hose 6, 5
4:26—2-2-2—2941 Hose 7, 2
4:31—2-2-2—2911 E. 11, 26, 24, 36, 48
5:02—2-2-2—2931 E. 32, 21, 8, 43, 23
5:30—10-3—recall off-shift
6:56—2-2-2—2931 Searchlight 1
8:30—10-3 3-3**—recall signal stuck out
9:29—10-2 3-3—Response limitation removed
9:30—10-1 3-3—detail curtailment removed

*2-2-2 special call.
**3-3 out of service.

SPECIAL COVER-IN CALLS
(Not provided for on assignment cards)
p.m.—Signal

4:32—4-4-4*—Trucks 5/1 10/5
4:34—4-4-4 —Trucks 14/10 11/7
4:35—4-4-4 —Truck 15/6
4:39—4-4-4 —Truck 17/9
4:50—4-4-4 —Engines 21/17 22/21 49/22 32/35 8/1
4:51—4-4-4 —Engines 20/8 43/29
4:52—4-4-4 —Engines 23/34 25/16 18/25
4:56—4-4-4 —Truck 16/4
5:14—4-4-4 —Engines 22/17 49/21 45/22 13/35 38/13 33/38 44/29 46/34 47/46

*4-4-4 special cover-in signal.

Rear Admiral Beary, commandant of the Twelfth Naval District, sent to Mayor Roger Lapham of San Francisco a letter expressing "sincere appreciation of the Navy for the very efficient work of the Fire Department of San Francisco in assisting at the Treasure Island Fire."

"Through the courageous efforts and well-organized departments from your city, the fire was localized within a small area which resulted in a minimum of loss at that establishment," the Admiral continued. "Please convey my sincere thanks and appreciation to Chief Albert J. Sullivan and to the men under his command who rendered this excellent work."

In forwarding the letter to Chief Sullivan, Mayor Lapham added his own commendation.

HEAVY LOSS AT ROCKFORD FIRE CHARGED TO LOW WATER PRESSURE

Sprinkler System Fails to Function Effectively When Pressure Drops

By Bill Garson

ROCKFORD, Ill., suffered its worst fire in history on March 12, when an ancient piano company building, covering an area of one square block and housing a furniture factory, a trucking terminal, a liquor distributing firm and storage space for a dozen industrial firms, was leveled with a loss of $750,000.

The old Haddorff building, located in the industrial section of Rockford's southeast end and comprising five interconnected, three-story brick-veneer structures, was lost because of the lack of water, Fire Chief Wayne E. Swanson said:

Every member of Rockford 84-man fire department, assisted by the Rock River volunteer fire department and hundreds of volunteers among the 10,000 spectators, sought to stem the blaze, fed by oil, rubber, liquor and lacquer and lashed by a strong east wind.

"We couldn't get enough water," Swanson said. Although four pumpers drew water from mains, they couldn't develop sufficient pressure. Swanson said two hydrants nearest the blaze carried static pressure less than 10 pounds, when 50 pounds was normal.

A single 8-inch main supplied the industrial area in that section with water. A 12-inch main had been planned but had not been built.

Wiped out by the fire were the Knox Motor Service, Inc., Garland Distributing Company, the Mid-States Wood Products Company and the Fader Machinery Company warehouse, leased by a dozen industrial firms, which had stored there everything ranging from a $15,000 power crane to wood chucks for boxes and special wood screws for export.

According to Chief Swanson and Deputy State Fire Marshal Lester

Silhouetted Against the Flames, Ruins of the Knox Motor Terminal in Rockford Are Charred Skeletons as the Fire Sweeps on to Destroy Four Other Buildings

Part of the Rubble of the Haddorff Piano Company After Fire in Rockford, Ill. Note Wrecked Sprinkler Piping

Fiedler, the blaze apparently started in the tire repair section on the second floor of the Knox company. The fire was discovered at 5:20 P.M. when Knox workers on the first floor noticed water dripping through the ceiling from the second floor.

The sprinkler system in the Knox building failed to control the fire until firemen arrived, apparently because the intense heat set off all sprinkler heads on the floor and reduced the already low pressure in the line, Fiedler explained. The sprinkler was not hooked up to an ADT line.

A four-man squad narrowly escaped being trapped on the roof of the Fager building, adjoining the trucking firm. They had lugged a line to the roof and were directing a stream on the trucking company building when a heavy explosion took place in the Knox building, setting afire the wall and roof of the building on which they stood.

Employing water from the elevated tank of the Burd Piston Ring company, across the street from the blaze, firemen made a water curtain and kept that building from bursting into flame, although its walls had begun to smoke from the intense heat.

Flying debris from the blaze set fire to the Weiman furniture plant only 500 feet away, landed near the Rockford Varnish company where guncotton and benzine were stored, and threatened an additional half dozen other industrial plants near by.

Off-shift firemen were called back for the fire. Ten pieces of equipment, leaving only two over-age pumpers and an aerial truck to cover the city's 12.6 square miles, were called to the fire.

The blaze, reported at 5:20 P.M., Wednesday, March 13, was not tapped out until afternoon the following day.

Fire-Fighting Dog

"Frisco" is a hound that puts out fires, eats like a goat, enjoys a sociable sip of beer or a "snort" now and then, but isn't worth a darn as a watch-dog.

Frisco—named for the USS San Francisco and not for the great 1906 west coast fire—is the year-and-one-half-old beagle-fox hound pet owned by Deputy Chief George A. Patterson of Windsor, Conn.

As a firefighter, Frisco is completely unorthodox. He has a particular dislike of smouldering cigarette butts or cigar butts and snuffs them out with an efficiency which should, but never has, given him the hot-foot.

Frisco bats the lighted butts around with one paw. If it should be a stubborn fire, he hops on with all four. Then, satisfied the fire is out, he eats the remains. He has no preference for brands and enjoys them all.

Frisco's odd eating habits are not confined to tobacco. He relishes onions and garlic, in the raw or mixed with vegetables, meat, fish or any other edible item that happens to be handy.

Deputy Chief Patterson, who also is chairman of the Windsor Fire Board and operates a hardware store in this small Connecticut town, can't explain the hound's strange eating and drinking habits, nor his proficiency in snuffing butts.

"All I know," said Patterson, "is that he does what he does. But he isn't worth a darn as a watch-dog."

TOM MAGNER

No Pay for Time Spent Sleeping

In a decision attracting widespread attention among city officials, the Seventh U. S. Circuit Court of Appeals ruled recently that firemen in Elwood, Ill., have no rightful claim for pay for hours spent sleeping at the firehouse.

The decision punctuated the first court case of its kind according to the Municipal Finance Officers Association. The circuit court ruling reversed a lower court award of $276,619 to 53 Elwood firemen for time spent sleeping at the local ordnance plant fire station.

Firemen sleeping in the firehouse in order to be available for immediate duty are "waiting to be engaged," and were not hired "to do nothing but wait for something to happen," according to the higher court. The court decided that during the sleeping shift of their 24-hour stint at the firehouse, firemen should be paid only for time spent on emergency calls.

Minneapolis Increases Radio

The Minneapolis Fire Department has placed in operation a two-way FM-radio system, with units installed on forty-one pieces of fire apparatus and in ten officers' cars, it is reported.

Receivers have been installed in twenty-three fire stations and Fire Chief Lockhart and his radio supervisor also have receiving sets in their homes.

All telephone and box alarms are transmitted over the air and over the regular fire alarm wire system.

The Fager Company Warehouse, One of Five Three-Story Interconnected Structures Destroyed in the $750,000 Haddorff Piano Company Fire in Rockford, Ill., March 13, Crumples as Flames Gut the Structure and Weaken the Walls

"Second Alarmers" Celebrate Quarter Century of Service

One of the oldest and most active of the nation's "buffs" organizations (not included in FIRE ENGINEERING'S November 1946 tabulation) is that of the "Second Alarmers' Association of Philadelphia," the headquarters of which are located at 51st and Sansome streets, that city.

According to information released to FIRE ENGINEERING by its Recording Secretary, Joseph C. Farley, the organization celebrated its 25th year of service to the fire and police departments of Philadelphia on December 21, last, having been formed December 21, 1921, by a group of about 125 "fire fans." It received its charter from the State of Pennsylvania in 1924. At the present time there are about forty-five members, some of whom were among the original charter members.

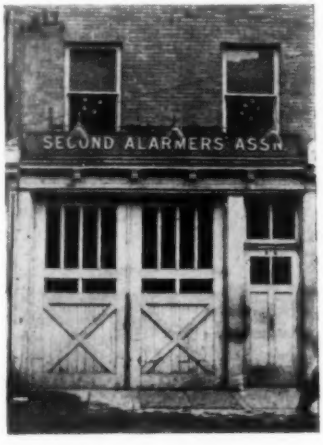
The organization is officered by a chief engineer, five deputy chief engineers, a treasurer, a secretary, custodian and one inspector, who are elected annually. There are no paid members. Membership dues are twenty-five cents per month and members are exempt from dues after five years of service. Initiation fee is $5.00 and applicants must file an application form with fee before admittance, accompanied by a letter of recommendation from an officer of the Fire or Police Departments or Insurance Patrol of the City of Philadelphia.

After the application is received and brought before the members at the regular monthly meeting, an investigating committee is appointed to report on the applicant at the next regular meeting. If its findings are favorable the applicant is accepted and immediately placed on a probationary period of one year, during which time if he should prove unsatisfactory he is automatically dropped from the rolls of the association.

Each member carries a badge and identification card which permits him to enter the fire lines.

Originally, the members defrayed expenses of the organization work out of their own pockets. When it was necessary to serve coffee, it was made up at the nearest firehouse to the scene of the alarm. After a few years the association obtained a Ford truck and from that time members were able to make coffee at the scene of the fire. The burners in the original truck were operated by gasoline which presented somewhat of a hazard in its operation. The latest wagon is operated by natural gas and the coffee makers can be fired up while responding. At present the organization has two wagons, the smaller truck being used for one-alarm fires and the larger for extra alarm calls. Where necessary, both units are placed in service, at the same emergency.

In 1923 the association purchased a building to house its truck, at 913 North



First Home of the "Second Alarmers"

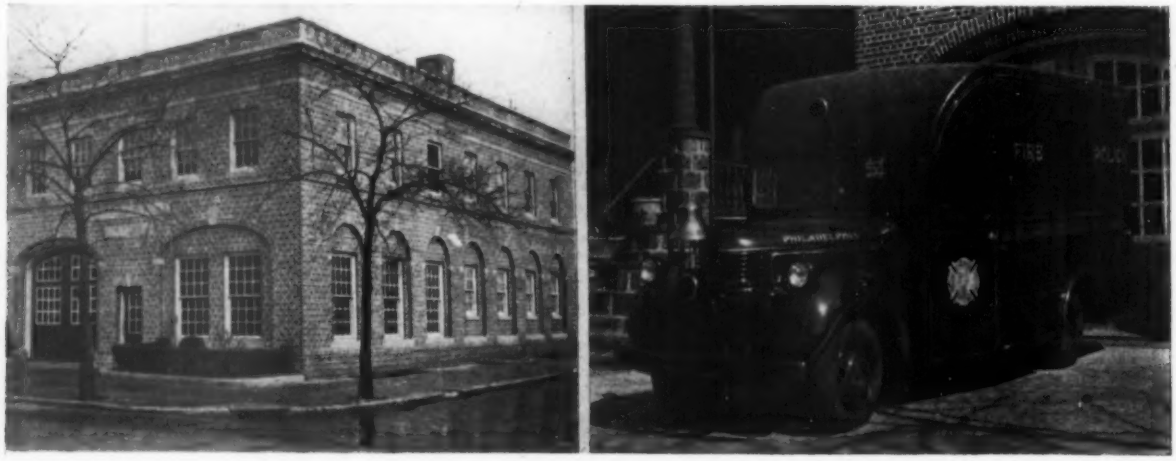
10th Street, Philadelphia. Prior to that the unit was located in one of the city's firehouses. Then, in 1938, the present quarters were secured at 50th and Sansom streets—the former location of Insurance Patrol No. 5 which was closed in 1937 and then sold to the association.

Alarms of fire are received just as they are in regular fire stations, via fire-alarm circuits. In the event of an alarm the member or members who might be at the station immediately notify the association roster by telephone. Should no one be at the station, the first member who learns of the extra alarm immediately notifies the driver nearest the station who proceeds to load the truck and roll to the scene of the fire.

According to Mr. Farley, during the day members are sometimes unaware of an alarm but the association has been fortunate in that for the past twenty-five years no extra alarm of fire has been missed. Even though no one may have been in the station at the time of alarm, at least one of the members was nearby,

(*Continued on page* 319)

Original Coffee Wagon Operated by "Second Alarmers"



Left: Present Headquarters of the "Second Alarmers." Right: Coffee Wagon Used for Extra Alarm Calls

COMBINED MUNICIPAL SERVICES SUGGESTED FOR NEW YORK CITY

Mayor O'Dwyer Proposes Uniting Fire, Police and Correction Departments

In April Mayor O'Dwyer of New York City proposed the merging of the city's Police, Fire, and Correction Departments and bringing into a single agency the Department of Sanitation and the Department of Public Works.

The proposal was contained in a letter to the Citizens' Budget Commission and was timed with the hearings on the city's contemplated all-time high budget of $1,029,210,314 for 1947-48.

Briefly, the Mayor would streamline the larger city departments and reclassify the civil service. He would merge the Police, Fire, and Correction Departments into a Department of Public Safety and then would merge the new Public Safety Department with the Sanitation and Public Works Departments, giving the 954 officers of the Department of Sanitation the status of peace officers in the new unit.

Under his proposed program, fire stations would no longer be manned by a full complement of men "siting around waiting fire calls." Instead, the manpower of the safety department would be spread in areas over the city, working from fast patrol cars equipped with two-way radios. Upon receipt of a fire call broadcast over the radio, designated cars would be expected to speed to the scene of the fire, meeting the fire apparatus there and taking over fire duties.

The work of firemen and policemen would be tied together so that police officers would be trained in fire protection and firemen trained in police work, while sanitation workers would direct traffic. According to reports, the change would place the greater majority of the Police Department's 19,875 men and the Fire Department's personnel of 11,197 on the city's streets.

At the same time, the Mayor proposes as a further economy measure, the use of lighter mechanical equipment such as was developed by the armed forces to replace manual labor. Motorized vacuum cleaners would be used for the streets and mechanical lifters for garbage disposal. He also urges greater standardization of equipment so that parts may be interchanged and unit replacements made to shorten the time that machinery is laid up in repair shops.

Mayor O'Dwyer expressed his ideas as representatives of the Fire and Sanitation Departments pleaded for more men and money for their work (the latter asking for 2,000 additional men, the former requesting $485,000 additional be allocated for 100 new positions for lieutenants of the department.)

Citing the need for economy, the Mayor pointed out that in 1932, appropriations for the Fire Department totaled $24,000,000. This year the figure is $50,000,000.

The Mayor infers members of the Fire Department are receiving too much favoritism. He questioned why firemen should have longer vacations than any other department. Battalion chiefs, he pointed out, get thirty-four days' vacation a year; other officers thirty days and firemen, twenty-seven days. Employees of other city departments receive twenty-one days. Informed that one of the reasons why 100 additional lieutenants are needed is to provide proper supervision of firemen assigned to theatres and other places of pubilc assembly, the Mayor said it was his impression that if there were proper inspections of the places and owners were forced to comply with all safety requirements there should be no need for the city to pay men to be present during performances.

New Jersey Plans Extensive Fire Training

Officers and Directors of the New Jersey State Fire College have announced a broad program of training for New Jersey's fire fighting forces. The Fire College, under the auspices of the New Jersey State Safety Council, will conduct six sessions in Newark beginning Tuesday night May 20 and succeeding Tuesdays through June 24. Practical training in the use of extension ladders, fire towers, smoke masks and similar equipment will be given in the three full day sessions to be held in the central part of the State during August, the dates and location to be announced later. Six sessions of the Fire College will be held in Camden in the Fall. All the sessions of the College in each area will be open to members of plant brigades, paid and volunteer firemen and fire officials from throughout the state.

The program is being arranged by the officers and directors of the Fire College with eleven state organizations, interested in fire prevention, cooperating, and it is the most ambitious ever attempted in the state. Among the subjects to be covered include: chemistry of fire with laboratory demonstrations, classifications of fire, first aid, fire gases, ventilation of burning buildings, automatic sprinklers and the fire department, airplane crash fires, fire extinguishers and chemical fire extinguisher systems, flammable liquids and electrical hazards.

The program for the sessions at Barringer High School, Newark is:

May 20, "Laboratory Demonstrations of the Chemistry of Fire", classification of fire, principles of fire extinguishment, L. S. Scheflan, Ph.D., Chemist, Pyrene Mfg. Company, Newark, New Jersey; "First Aid Fire Fighting", chemical fire extinguishers and air foam, J. Edward FitzSimmons, Vice-President, Pyrene Mfg. Co., Newark, New Jersey; Carbon Dioxide Extinguishers, hand portable, wheel types, systems, fire truck units, P. W. Eberhardt, Vice President, Walter Kidde Company, Belleville, New Jersey.

May 27, "Fog Applications", "Mechanical Foam Applications", "Fog-Foam Applications", film of the New Haven Fire Department training ground, demonstrations, Paul P. Heinz, Chief, Fire Department, New Haven, Connecticut.

June 3, "Size-Up", Dean Leon A. Watson, General Manager, Fire Rating Organization of New Jersey, Newark, New Jersey; "Airplane Crash Fires", U. S. Navy film; "Forcible Entry-Ventilation-Overhauling", James J. Deasy, Battalion Chief, Retired, New York City Fire Department.

June 10, "Flammable Liquids", R. M. Cadman, Engineer, Supt., Dept. of Engineering, Fire Rating Organization of

(*Continued on page* 318)

Officers and Directors of the New Jersey State Fire College

Seated left to right: Henry G. Jorgensen, E. I. duPont de Nemours & Co., Inc., Secretary; Chief William Plaskett, N. J. State Firemen's Association, Vice-President; Chief William Frodsham, Hackensack, Assistant Secretary; S. C. Williams, Pyrene Manufacturing Company, President; Leon Watson, Fire Rating Organization of New Jersey, Dean; Fred Rosseland, Newark Safety Council, Executive Director; George C. Miller, Loyalty Group of Insurance, Vice-President. Standing left to right: A. B. Graham, Graham Inspection Bureau, Director; John Arthur, Department of Public Safety, Director; Chris Hasselhuhn, N. J. State Firemen's Association, Director; A. L. Ganther, Walter Kidde Company, Director; V. E. Havers, Newark Safety Council, Consultant; Charles Greenfield, N. J. State Fire Chiefs Association, Director; Chief John Weeks, Newark Fire Department, Director.

The WATCH DESK

Overhauling the firemanic news of the day

by ROI B. WOOLLEY

X-Curricular Work for Rescue Crew

This is a sort of cat-o'-nine-tale of a near catastrophe in which the Cambridge (Mass.) Fire Department Rescue Company evidenced that quick-thinking that has made a name for firemen, and rescue-squadmen in particular.

According to our Cambridge correspondent, William (Bill) Reinhardt, Harvard "student-spark," the Cambridge Fire Department own a cat of which they're very proud. This cat answers alarms like an old-timer, and even slides the pole (probably a cat-cousin to that pole-cat-slider of the Boston Brothers.)

One day, however, fate struck and their cat broke its leg. There was much excitement—but nobody seemed to know just what to do in the emergency. Finally, a call was put in for the Rescue Company, which responded at record-breaking speed.

Upon arrival at the scene, Rescue-crewmen found a desperate situation. The cat was in great pain and in her, (or its) agony, nobody could touch her (or it) without receiving severe scratches. Finally, Edward DeMont, member of the Squad could stand the cat's suffering no longer. He whipped out his pocket knife, cut off the right trouser leg of his uniform, stuck the clawing feline into the severed trouser, and tied both ends. Ed then cut a hole in the trouser leg and worked out the injured limb. The cat's leg was then set and splintered without further trouble.

The Brothers of the Cambridge F. D. say Ed is deserving of reward for his quick thinking, but Ed claims its just "business as usual" for members of the Rescue Squad.

* * *

Doing His "Home Work"

A Dorchester (Mass.) fireman answered an alarm of fire at his own home in time to rescue his two small children from their third floor apartment, before fire swept the three-story wooden structure.

Alfred F. Hamel, Jr., was on duty at the Polish street fire station when an 18-year-old boy came running into the firehouse to give the alarm. Fellow firemen quoted Hamel as yelling "Let's go—that's my house."

After a quick run, Hamel hurried to the third floor to snatch up the children, Alfred Francis, aged five months and Donna Marie, aged three years, while Mrs. Hamel, who had been getting blankets to wrap the children, followed him to the street. Other firemen wheeled a 75-year-old invalid to safety as the fire, starting in the basement, spread through the building. Captain Phillip Flynn, acting chief, attributed the blaze to oily rags. (Thanks Southworth, Lancaster)

* * *

Afire—Phones Dad

In Detroit, Betty Green, 12-year-old daughter of David Green, businessman, escaped with her life as her distraught father, steadying his voice with difficulty, instructed her by telephone how to extinguish her burning clothing. The child, however, suffered second and third degree burns and was reported in critical condition.

Betty's housecoat caught fire from a stove while she was home alone. With her hair and gown ablaze, Betty telephoned her father at his office.

"Daddy, Daddy," she screamed over the phone, "I'm on fire—What shall I do?"

The anguished father quietly told the girl to go into a bedroom and wrap herself in a blanket. Meanwhile he instructed his secretary to summon a neighbor on another phone and then call the fire department. The neighbor took Betty to the hospital.

* * *

Hot Off the Tape

Firemen of Canon City, Colo., engaged in a running battle—to extinguish a moving fire. Fuel from a 3000 gal. underground gas tank seeped into the Arkansas River and caught fire, flowing downstream. . . . The Storm Lake, Ia., Fire Department got an assist on the birth of a boy. When deep snow blocked the route for Mrs. Roy Herdahl, Fire Chief Harold Stanton and eight men used a 26-year-old fire truck to break through to a hospital with her. Allen Roy, 9-lbs. 15 oz., arrived soon after. . . . In Alpha, Ill., the Fire Department answered its first alarm in two years and nearly got to the blaze too late because spectators driving to the scene clogged the road, delayed the vamps (thanks to several who sent this item). . . . There's a 'fire-fighting family' in Lock Haven, Pa.—Charles Waterman, 66 (what's in a name), and his six sons, Raymond, Boyd, Harvey, J. Clyde, Robert and Christian, are all members of the same fire company. Raymond is company head. . . . In Philadelphia, seven-months-old Evelyn Jones was dropped from a third story window of a burning home by her grandmother and safely caught by a neighbor. The grandmother was critically injured as she crashed to the sidewalk near Evelyn. . . . Also in Philadelphia, Meyer Newsstein, 65-year-old retired grocer, who clung for five minutes to a second-story window ledge to escape flames in his home, was rescued by a human "pyramid" formed by neighbors. . . . Orchids and a tear for 7-year-old Toby Malone, of Pulaski, Tenn., who was burned to death in an effort to rescue his invalid grandfather from the burning apartment in which they lived. The boy, outside the building when the fire was discovered, raced in—but perished as did the 70-year-old grandfather. . . . In Gettysburg, Pa., the Gettysburg Airport hangar burned and with it six private planes and 4200 baby chicks, that had been stored in hangar overnight. . . . In Atlantic City, N. J., a street and a row of houses were sprayed by fuel oil, which overflowed from a 300,000 gallon storage tank, causing a potential fire scare. . . . Obliging Charles Madison drove his blazing car seven miles to a New Castle, Ind., fire station to make it easy for the Brothers. . . . Until further fire prevention measures are taken, including additional fire exits, the gym' of the Tacoma Park firehouse, Tacoma Park, Md., will be limited to not more than 49 persons. The gym' is located in the basement of the firehouse! What's that echo about "shoemakers' children?" . . . Los Angeles firemen will effect the usual California dress, we're told. Sport shirts with a 2-way (not siamese) collar that will make a tie unnecessary; belts instead of suspenders and caps with removable tops are among the changes suggested by Chief John Alderson for approval vote of the force (Thanks Irv' Johnson).

* * *

Fire-Water—False Alarm—Fine

Mrs. Margaret Lake Hubitsen, whose husband is in the Navy, was sentenced to thirty days in jail and fined $100 by Magistrate Maurice Simmons in Lower Manhattan (N. Y. C.) Court, for turning in a false alarm at 12:30 A.M. of a Saturday morning at Eleventh Ave. and Twentieth St., Manhattan.

The box brought four Engine Companies, two Ladder Companies, a fire boat, a section of the fire patrol, an ambulance, a deputy chief and two battalion chiefs, but worse, it resulted in the serious injuries to Patrolman Frederick Getty, 25, who was run down by an automobile as he tried to clear a way for oncoming fire apparatus.

"I did it, but I didn't mean to hurt anybody", cried Mrs. Hubitsen before the Magistrate. "I did it on a dare of some man. If I hadn't been drinking I wouldn't have done it."

"What were you drinking" asked the Magistrate. "Vodka" she replied.

"You directly injured that policeman as if you had stabbed him with a knife or shot him with a gun. . . . You're not a high school girl, and you weren't on a New Year's party," the Court scolded her, and imposed fine.

Firemen were interested in the fact that response to that phony call stripped an area between Fourteenth and Twenty-Sixth St. from Seventh Ave., to the Hudson River of fire apparatus.

Edward Pierce, 19, of Philadelphia, driver of the car that struck the policeman, was held in total bail of $525 for reckless driving, failure to give fire apparatus the right of way, and so on.

* * *

Write Your Own Caption

This one is told by Capt. Marshall Hussey of a King County (Ill.) Fire Protection District volunteer company and is relayed by clipper Earl Nolan of Quincy, Ill.

Seems that firemen were called out before daybreak one cold morning to fight a blaze in a cabin court. Adjoining the court was an open field and in the field one of the vamps noticed what appeared to be a scantily clad woman.

Half an hour later, as the fire was dampened down and day began to dawn, the fireman spotted "her" again—same place, same position.

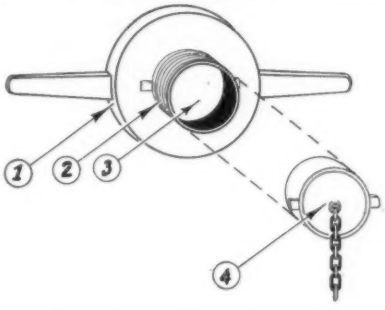
"That woman has been standing out there in the cold all during the fire" the tired firefighter said. "She must be nearly frozen—and maybe its her cabin that was burned. I'm going over and let her have my coat."

He took off his coat and started into the field whereat his fellow firemen began laughing. The "scantily clad woman" was a scarecrow with a burlap skirt and blouse.

Short Cuts and Gadgets

FROM FAR-OFF HAWAII

From Lieut. Edward J. Bento of the Hilo Fire Department, Hilo, Territory of Hawaii, comes a short-cut which we pass along to the service. He says: From my experience this combination



Combined Suction Intake Cap and Fitting

1. Suction intake cap. 2. Passage made on suction intake cap. 3. Two and one-half-inch brass coupling "male end" welded on suction intake cap. Same may be used for straight lays, relays, etc. 4. Two and one-half-inch female thread to cap 2½-inch male coupling.

will aid departments where the straight lays are used, more so in the residential fire districts. The normal hook-up, when using the straight lay, involves the coupling on of various reducers, etc. whereas, in this combination of suction-cap and 2½-inch coupling, the lay is reduced considerably in time and is less complicated and more efficient."

As the sketch indicates, the Lieutenant makes an opening on the intake cap of the pumper, welds on a 2½-inch coupling with the male end out, to which regulation 2½-inch hose can quickly be connected. When not in use the threads are protected by a 2½-inch cap with female thread. A light chain may be added to prevent loss of the small cap.

Seems to us we've seen this idea used before, be we can't remember where.

* * *

Things the Old Timer Doesn't Like—

We dropped in on the Old Timer the other noon and in the course of a brief but spirited discussion about the practical side of fire fighting, he unlimbered himself of some "pet peeves," which we pass along for what they may be worth. He hates to see—

—firemen at work inside a building—particularly a residence—smoking on the job

—firemen working on ladders that are insecurely placed, or set—without a man at the butt

—firemen operating at fires improperly dressed for the weather and/or the type of work they've got to do

—the "Johnny-come-latelies" who, because they've had a high school or a college certificate and perhaps rated well up on the probationer's list, think it's their duty to tell their officers how everything should be done

—the phony who's always back "chasing kinks" or "carrying orders," when he's needed on the pipe to help the crew at a dirty "worker"

Editor's Note: These are by no means all the peeves of the Old Timer. We're reserving others for later issues. Meanwhile, perhaps you know an Old Timer whose gripes may be worth adding to this list? If so, shoot 'em along.

* * *

SELLING THE FIRE SERVICE

According to the Annual Report of the Fire Department of the City of Akron, for 1946, Chief F. C. Vernotzy, the department maintains a large display or bulletin board at fire headquarters, where it can be seen by all visitors and members of the department.

On this board is kept a running, statistical account of local fires, losses and other pertinent information.

This is somewhat like the out-of-door "campaign" bulletins used in Community, Red Cross and other drives, to show the status of the money raising operations.

This seems like "good salesmanship" both in "selling" the community on the fire service, and in "selling" the service on its own importance and effectiveness.

* * *

CARRY EXTRA CAP, SAYS HANSON

Demon contributor Harry T. Hanson, Maynard, Mass., keeps up his record with another pertinent suggestion. He says:

"In communities that have removed the chains from hydrant caps it will be found advisable to carry an extra hydrant cap in the tool box of the engines during the winter months, when there is snow on the ground, to replace the regular cap if it should become lost in the snow when hooking up.

"The water department usually has a surplus of caps which have been removed from discarded hydrants, so that the loss of a cap now and then will never be felt."

* * *

ADAPTER FOR MECHANICAL FOAM

Mr. Isaac Holiber, former Civilian Fire Marshal with the Navy and now

Assistant Industrial Fire Chief, New York Naval Shipyard, gives us permission to describe an improved appliance for easily and quickly changing from fog to mechanical foam and without shutting down the hose line.

The device—it is more than a mere 'gadget', consists of a simple threaded adapter, the male end of which is screwed into the regular mechanical foam nozzle (see drawing) and the 'bayonet' end of the adapter is locked into the all-purpose (Navy-type) nozzle just as is done with the regulation applicator. In use, the nozzle is shut off, while the changes are made. The pickup tube or hose usually used with this type foam nozzle is then placed into the can of liquid foam, the nozzle is opened and water and foam applied as desired.

The shift to foam takes but a moment —the nozzle shut-off serving to cut off the flow until the adapter and foam nozzle are added.

Chief Holiber has applied for patents on his invention, which we understand is now a regular part of the Yard Fire Department Equipment of the Navy-yard.

* * *

The Old Timer Says—

The good old days when blueshirts used to sit out front, with a jaw full o' cut plug an' the sidewalk as a spittoon are gone forever, along with the horses.

* * *

The Old Timer Says—

It's always seemed strange to me to see firemen, especially those working on dwelling fires where people can see 'em, smoking on the job.

I s'pose the practice is more prevalent in volunteer departments, but volunteer or paid, it doesn't make very good sense to me, nor does it elevate the fire service in the eyes of the public.

* * *

RECHARGING S & A EXTINGUISHERS

Two ideas relating to recharging soda and acid extinguishers are advanced by subscriber Kayton G. Moses of Baltimore, Md. Here is No. 1—

Should it be necessary to recharge 2½-gal. S & A extinguishers frequently, you should provide yourself with a radiator fill or sprinkling can of 3- or 4-gals. capacity, with an open spout. Solder a tab on the inside at the 2½-gal. level. You won't need a funnel, and still will spill less.

Idea No. 2—Dates of extinguisher recharges can be written on an ordinary gummed label, pasted directly to the extinguisher and covered with cellophane tape. If carefully covered, they will be sufficiently waterproof, and won't get lost as tags sometimes do.

Booster Operations (Ahrens-Fox)

Mr. Moses has another suggestion that may interest users of Ahrens-Fox piston pumps in booster operations. He says: "I have found, when using Ahrens-Fox piston pumps in booster operation, that pressure will build up quicker if the air is bled from the top of the pump after each use. There is usually a drain cock on the line to the 'pressure' gauge which is most convenient for this. Cylinder bleed cocks, if provided on the top of the pump, can also be used."

The ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

JUVENILES—AND ARSON

THE discussion in this Round Table is a continuation of that which appeared in the April issue of FIRE ENGINEERING on juveniles and arson.

The generous response from our readers makes it necessary to carry the discussion over to this issue and to the June issue as well.

Readers are invited to send in their comments on this subject. Address communications to Round Table Editor, FIRE ENGINEERING, 24 West 40th Street, New York 18, N. Y.

HERE IS THE QUESTION

1. **Have you experienced any cases of fire setting by juveniles during the past year?**
2. **How many fires are believed to have occurred from this cause during 1946?**
3. **Did any such fire develop into major ones? If so, what were estimated losses?**
4. **What do you believe to be the basic cause of juvenile fire setting today?**
5. **What suggestions would you make for correcting this dangerous development.**

Discussion of the Topic

Lawrence F. Lynch, Chief, Brockton, Mass.: We have experienced approximately six fires set by juveniles (not including a large number of brush and grass fires) during the past year.

Two of these fires threatened to develop into major ones. One, where the loss was approximately $6,000 endangered a number of lives and the other, causing a loss of $50,000 threatened to become a conflagration.

The basic cause of juvenile fire setting, in my opinion, is lack of parental training.

I believe training through churches and schools would help to correct this dangerous development.

A fire occurred in the J. C. Keith stables the latter part of June of 1946. This fire necessitated a two-alarm fire call. The fire started in a 1-story wooden frame building housing live stock and quantities of hay. The building was sandwiched between two three-story frame buildings, one a large manufacturing plant with a basement used for the same purpose, making it actually a four-story frame building. This building was exposed to the fire because of its closeness and the intensity of the fire itself. Had not a sprinkler system and a well planned fire fighting system been used, this building might have been a complete loss with close to a million dollars loss. The fire was investigated thoroughly and found to have been started by young boys.

Earle R. Downes, Assistant Corporation Counsel, Chicago, Ill.: Answering your questions chronologically, we have experienced a great deal of fire setting during the year 1946 by juveniles.

In the table below from "Chicago's Law Year 1946," page 160, a statement is given of the complete investigation of fires by this section of the Corporation Counsel's office for the year ending November 30, 1946. It is to be noted that this table discloses that a major percent of the convictions were of juveniles who set fires.

INVESTIGATION OF INCENDIARISM AND INTERFERENCE WITH FIRE DEPARTMENT FOR YEARS ENDING NOVEMBER 30, 1944–46

Arson Investigation	1944	1945	1946
Number of suspicious fires investigated	331	312	415
Persons taken into custody	70	95	119
Turned over to juvenile court	34	51	60
Released to parents because of age	7	8	7
Turned over to police for psychiatric treatment	5	5	1
Convicted of arson	—	5	2
Convicted of malicious mischief	9	13	29
Convicted on other counts	2	5	11
Released for lack of evidence	8	7	3
Dismissed after trial	3	1	4
Pending November 30th	2	—	2
Inquests attended where death resulted from fire	32	28	39

It will be safe to say that juveniles were responsible for at least 60% of the fires investigated during the period referred to above. This may be a minimum estimate as we are at times unable to obtain all the locations from juveniles where fires have been set by them.

A high percentage of instances of fires set by juveniles develop into major fires. In looking over the files for the last year we find 10 or 12 fires started by juveniles that aggregate a minimum damage of $750,000.

We believe that the basic cause of juvenile fire setting today is malicious mischief, including not only the active fire setting but burglary and general vandalism. However, we have encountered, during the last year, some cases of fire setting by pyromaniacs. It is needless to say to you that a pyromaniac sets fires from sexual impulses.

It is a difficult thing to establish a set rule or procedure to correct juveniles because of the fact that their parents do not as a general rule aid or assist the authorities.

During the war there was a general rise in juvenile delinquency due to the fact that children were, in many cases, without parental supervision.

Until the time comes that the problem can be approached from a national standpoint and teeth can be put into laws that will hold parents of children responsible for the actions of their children, nothing much can be accomplished to stop juveniles from committing crimes.

A short time ago I answered a letter from New York asking me about the duty of judges handling juveniles. In Chicago we are fortunate to have a man who pays very close attention to juvenile delinquents. However, as a general rule, too much leniency is afforded a juvenile for acts that are really reprehensible and after conviction, if such is the case, the juveniles are sent to institutions that tear down morale rather than built it up.

We could cite many interesting cases about juvenile fire setting but one that strikes us as rather amusing, although it is of a serious nature, is interesting from a juvenile slant. The president of the Bell Chemical Company sustained a very heavy loss in a fire recently in Chicago and he received a communication through the mail in which it was stated that for $75 the writer would reveal the person who set the Bell Chemical Company on fire. The Bell company president was directed to leave $75 in a certain mail box to be picked up by the informer. The note was signed by the informer "With all my love, Pal." The writer sent a squad out to pick this person up and after he was apprehended he confessed to not only the Bell Chemical fire but to a great number of lumber yard fires on the south side of Chicago. The boy had a very low mentality and one that seemed to be directed towards a stage where he could be classed as a pyromaniac. We were very fortunate to apprehend him or this boy would have gone on until he had caused some very serious catastrophe.

Kenneth Cassel, Chief, Hamilton, Ont.: We have had thirty-six fires caused by juveniles from January, 1946, to date. Five of these fires were major ones. These fires included one in a groceteria with a $600 loss; two fires in St. Thomas Anglican Church, loss $20,000; one in Queen Victoria Ele-

(*Continued on page* 338)

Manufacturers' Announcements

New Onan Engine

D. W. Onan & Sons, Inc., Minneapolis, Minn., have announced a new engine of 10 horsepower, 4-cycle, air-cooled. It weighs only 97 pounds.

The new Onan CK engine is a complete departure from conventional design in several important features.

Onan CK Engine

It is built of aluminum which, compared to cast iron, has a 4.5-to-1 ratio of thermal conductivity advantage over cast iron.

More and longer cooling fins on the cylinders and cylinder heads of the new CK allow more rapid heat dissipation. In the CK, each cylinder has over 340 square inches of cooling surface.

Axial flow fan provides cool air at the rate of 600 cubic feet per minute at rated horsepower of the engine without absorbing an excessive amount of engine power.

The opposed cylinder construction results in smoother running balance and freedom from vibration (because of the counteraction of the unbalanced forces of the pistons and connecting rods) and makes possible a shorter, stronger crankshaft.

An improved ignition system has been developed for this engine which consists of a low voltage pulse-generator which supplies current to a hermetically sealed, high voltage ignition coil mounted on top of the engine for easy servicing.

A gear type oil pump provides positive pressure lubrication.

The engine has a 3" bore, 2¾" stroke and 38.8 cubic inch piston displacement.

A direct connected electric starter, which is built into the flywheel, as an integral part, is an optional feature.

Scott Appoints Export Agents

The Scott Aviation Corporation of Lancaster, New York, announces the appointment of the Southern Oxygen Co., Inc., Export Division, 80 Warren Street, New York 7, New York, as their Export Agents for the Scott Air-Pak.

This self-contained breathing apparatus was first introduced one and a half years ago by this company, who for over 15 years has designed and manufactured aircraft accessories, including Army Air Forces portable oxygen breathing apparatus, and currently are producing portable oxygen breathing equipment for modern commercial and freight airliners. The Scott Air-Pak uses high pressure compressed breathing air. The air is stored and carried in low weight I.C.C. Approved cylinders in a back pack of aluminum sheet, and rubber-dipped webbing; air flows through triple ply steel, and rubber armored hose to a Demand Pressure Regulator on the wearer's chest, through it to the Willson Face Mask. A radium dial gauge on the regulator indicates remaining volume.

The Scott Air-Pak is now being used in the following countries—Sweden, England, France, Australia, South Africa, South America, and Saudi Arabia.

Mack Opens New Factory Branch

Designed to provide complete sales and service facilities, this new steel and concrete block building at Wilkes-Barre has just been opened by the Mack Truck Company as one of its chain of direct factory branches. Among the features of this building are a service area with only one column, electrically-operated overhead door and overhead trolley for removing motors from chassis to motor work room Housed in a separate structure is a central steam plant which provides heat and leaves the main building free of furnace dust and fumes.

Practical Demonstration of Back-Pack Pumps

The Sedan, Kan., Fire Department had opportunity to demonstrate the effectiveness of Indian fire pumps on a spreading brush fire recently. A rancher phoned, asking help to fight a brush fire. The Fire Chief, the Mayor, two councilmen and a businessman took two Indian pumps and drove to the ranch. They made quick work of the fire, bringing it under control without exhausting the supply of water carried in the pump tanks.

Asbestos Textile Institute Elects G. W. Marshall, Jr.

G. W. Marshall, Jr., general manager of the Asbestos Textile & Packing Division of Raybesto-Manhattan, Inc., has been elected president of the Asbestos Textile Institute, Philadelphia, the non-profit organization that serves manufacturers and the trade dealing in asbestos textiles.

New Alfco Speedex Midget Extinguisher

The American LaFrance-Foamite Corporation of Elmira, N. Y., has introduced a new small, compact, midget "trigger-quick" carbon dioxide fire extinguisher, total weight of which is less than 12 pounds.

Called the Alfco Speedex, it measures 3 9/16" by 22". Its contents weigh only 3⅝ lbs. but expand upon release to 450 times their contained volume.

The Speedex is reported to be efficacious for extinguishing small fires in oils and greases and small electrical hazards. Its rating by the Underwriters' Laboratories is B-2; C-2.

Literature describing the new product is available upon application of the above company.

(Continued on page 322)

FALSE ALARMS

Magic

A group of sailors on a freighter were frequently entertained by one of their number, a sleight-of-hand performer of no mean ability, during the long evenings at sea. His act, in which cards, money and handkerchiefs were made to disappear, was enjoyed by all aboard—except one—a parrot which greeted each performance with a raucous, "Ha, ha, ha! Phooey!"

The ninth night out, in the midst of the show, a terrific storm arose and the boat sank. The prestidigitator was thrown into the ocean and managed to grasp some wreckage to support his weight.

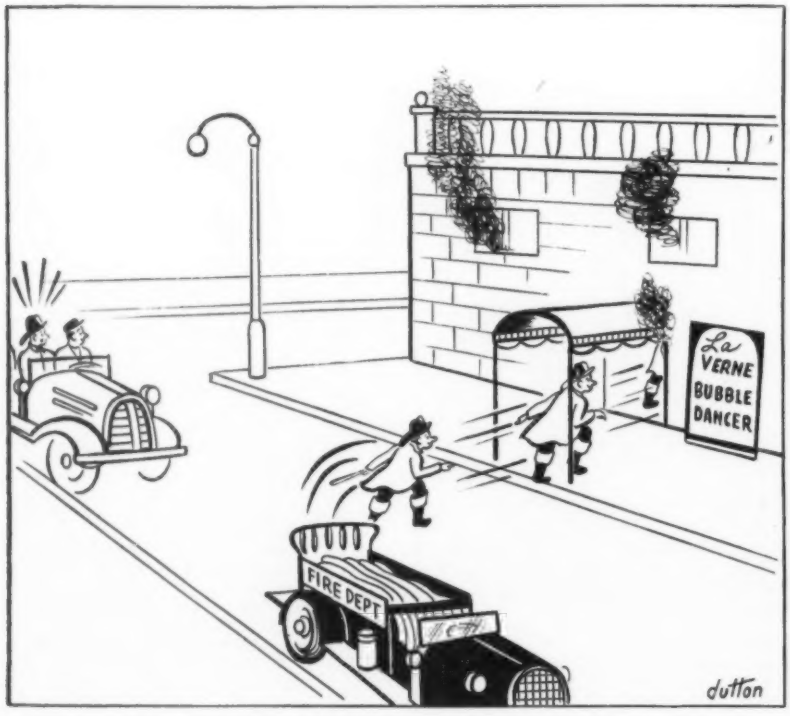
The following morning he was startled to see his critic, the parrot, sitting on an upright on his improvised raft. Not a word passed between the castaways for two days. Suddenly, however, the parrot looked down, cocked his head, and with a gleam in his eye demanded:

"Alright, what'd you do with the ship?"

The lunatic, after a very exemplary record of sanity, was discharged from the asylum and returned home. Deciding the next morning to shave, he nailed the mirror to the wall, stood before it, lathered his face, then selecting an old-fashioned razor, proceeded to shave.

At this moment the nail slipped; the mirror fell to the floor. He stood gazing at the blank wall before him, then remarked bitterly: "Just my luck, second day out and I've cut my blooming head off."

"I Thought I Told You I Wasn't to Be Disturbed!"



"I Can't Remember When the Boys Have Moved So Fast!"

Teacher to Farm Boy

"Tommy, will you give the class the definition of 'tidbit'?"

Tommy (very pensive for a moment): "Well, I can't give the definition, but one time I saw a calf get the devil kicked out of him on account of it."

"Aren't you getting tired of this bachelor life all the time, Bill?"

"Certainly not," replied Bill. "What was good enough for my father is good enough for me."

Many Tongues

"How is your son getting along at college?"

"He must be getting along pretty well in languages. I just paid for three courses—$10 for Latin, $10 for French, and $100 for Scotch."

"Oh, I like the scenery around here," observed the vacationist. "But the people up here are queer."

"Wa-al, yes, that's so," replied the New England farmer. "But one good thing, most of them go back home about September."

Pottstown, Pa. LOOKS AT THE RECORD-

* 31 YEARS PERFECT PUMPER PERFORMANCE

* 3000 FIRES ATTENDED

31 year old Ahrens-Fox Pumper in regular service at Pottstown, Pa.

and purchases Another AHRENS-FOX!

Shown below, new Ahrens-Fox Model H.T. 1000 g.p.m. Twin-Triple Piston Type, Triple Combination Pumper recently delivered to Good Will Fire Company, Pottstown, Pa.

Instituted January 6, 1871

LESLIE D. RHOADS, President — J. ERNEST SPARE, Secretary — Incorporated May 24, HARRY P. BACHMAN, Treasurer

Good Will Steam Fire Engine Co., No. 1

April 11, 1947

The Ahrens-Fox Fire Engine Corp.
Cincinnati, 12, Ohio

Gentlemen:

We would like to take this opportunity to thank you for a job well done. We have in service one Model L 4 Triple Combination Ahrens-Fox Piston Pumper, which you delivered to us on June 15, 1916, thirty-one years ago. It has never failed to answer the alarm in any of the three thousand fires which it has attended and still has not shown why it will not last for another five years or more.

We think that this is a piece of equipment to be mighty proud of.

May we in closing say that the new Ahrens-Fox, 1000 Gallon Triple Combination Piston Pumper which you delivered to us on March 15th of this year passed through the rugged Underwriters test with lots of stuff in reserve, so we again say

Thanks for a job well done.

Signed Robert Roth
Chairman of Board of Directors

Signed Rollin H. Klink
Chief Engineer

FOR DEPENDABLE FIRE PROTECTION rely on

AHRENS-FOX

A PUMP FOR EVERY PURPOSE

AHRENS-FOX FIRE ENGINE CORP., CINCINNATI 12, OHIO

Texas Explosions

(*Continued from page* 301)

One of the first of the several ensuing oil storage fires started in a large tank on the farm of the Atlantic Refinery, about 4,000 feet from the dockside. These were doubtless caused by flying fragments.

Second Ship Blows Up

At about 1:10 A. M. the following morning, April 17th, the freighter High Flyer, also partially loaded with a cargo of ammonium nitrate, exploded. This blast tore apart the freighter Wilson B. Keene, moored nearby, leaving only a portion of its stern showing. The High Flyer, like the Grandcamp, was blown to bits.

Fire is known to have preceded the explosion on the High Flyer but unlike the Grandcamp, no firemen were aboard the ship or nearby, at the time of the blast. Just how many stevedores, dockworkers, rescuers and others died or were injured in this second explosion may never be known. That there were not more casualties is credited by some to W. H. Sanberg, Terminal Railway vice-president, who correctly interpreted conditions on the burning High Flyer and shouted repeated warnings for those nearby to clear out and take cover.

It was disclosed by the evidence of survivors that the same procedure was followed on the High Flyer as that aboard the Grandcamp—the hatches of holds loaded with hundreds of tons of ammonium nitrate were battened down; nor was any attempt made to extinguish the fire, started, it is believed, by the explosion of the Grandcamp.

Franklin R. Woodyard, chief mate of the wheat-laden ship Wilson B. Keene, testified that when he was notified of the fire on the Grandcamp he ordered the hatches of his ship covered and sent the longshoremen ashore. He called his chief engineer to inquire how long it would take to get the ship under way and was told by him, about an hour. He said it appeared that the Grandcamp fire was being brought under control, so they delayed moving. After the Grandcamp exploded he fought his way to the deck and found the concussion had pushed his ship about twenty feet from the dock. He ordered his men to bring the Keene closer to the pier so they could get ashore.

Confusing reports were issued concerning the efforts, or lack of them, to move both the High Flyer and the Keene. The Board's investigations, however, disclose that tugboats did make an unsuccessful try at towing out the High Flyer, and only barely escaped disaster in so doing.

Second Blast Involves Additional Oil Tanks

The explosion of the High Flyer was only slightly less destructive than that on the Grandcamp. Oil tanks of the Humble, Republic, Stone and Sid Richardson Oil Companies were involved as a result of this blast. It is reported Humble lost six full tanks of crude oil and one of bunker. The Richardson tanks were mostly empty at the time. Republic Oil is said to have lost several 80,000 barrel tanks and contents, and the Stone Company suffered loss of smaller storage units.

An effort was made by fire fighters, almost three days after the second explosion, to control the fire in Humble's bunker tank but, it is said, without much success. This fire started from the boil-over of a nearby burning tank. As fresh fire forces arrived from Houston, Baytown and other places, units were dispatched with such equipment as was available to extinguish the remaining fires. On several occasions early in the struggle, emergency forces contemplated using dynamite to forestall further extension of the fires.

Fire, for the most part on tank farms, continued to burn for almost six days before being extinguished or burning themselves out.

Lessons and Conclusions

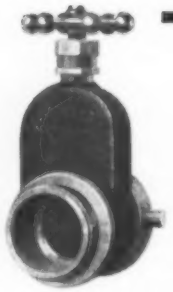
Although the origin of the Texas City disaster may remain obscure, there is sufficient evidence available to warrant a number of pertinent conclusions:

1) Concentration of high-hazard industries or occupancies within an area where they are subject to actual or potential threat of explosion and/or fire, or of the chain effects of either, is inviting catastrophe.

2) Hazardous occupancies and operations must be studied not only from the viewpoint of the hazards integral to each occupancy or occupation, but from the standpoint of the mass exposure hazards within the group.

3) Where such hazards exist (group concentrated hazards)—and they are to

Give Fires the Gate – single and double!



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be found in relative degree in almost every industrial city—and segregation or other necessary safeguards cannot be taken, some other preventive and protective measures should be developed to meet the individual conditions. These measures are no secret. They were known and taken during World War II. The United States made millions of tons of high explosive during the war, yet such was the system of control in production and in transportation by land and sea that there was no serious mishap.

4) The catastrophe bears out what this journal has repeatedly said, that the war has left us a heritage of hazards, many of them beyond the comprehension not only of the fire service, but of learned scientists, physicists and chemists—so far as their death-dealing, property-destroying potentialities are concerned. Those charged with fire prevention and control must be more fully informed on these new hazards, and the techniques that should be employed in combating them.

5) Not only should the fire and explosion hazards of ammonium nitrate be further analyzed, but hazards related to numerous other present-day chemical "doubtfuls" and "unknowns" should likewise be studied. The scientific world may know much about the chemicals themselves, but not enough about the reaction of these chemicals when combined with other chemicals and compounds. And their knowledge, as it relates to fire and explosion hazards, should be made available to the field.

6) It is evident the method of handling, loading and transporting ammonium nitrate (and possibly other similar commodities) needs modification. Ships that carry high explosives, gasoline and the like, should be anchored or moored in some special area of a port, where there are no such installations as refineries, chemical works or large oil storages.

7) The method of marking containers of ammonium nitrate (and like "unpredictable" potential explosives) should be overhauled and revised.

8) Not only should there be stricter supervision of loading, handling, transporting ammonium nitrate and any other chemicals or compounds that may under extreme or unusual conditions create serious hazards, but there must be more rigid enforcement of regulatory safeguards, and it may well start with "NO SMOKING!"

9) There should be more education of members of the fire service and related authorities to the danger of chemical hazards. This is particularly true of the volunteer fire service.

8) Finally, it should be obvious that every community—even if it hasn't a multiple-hazard problem—ought to have a well-prepared mutual-aid plan that will function under all normal and abnormal conditions of emergency such as arise not only from conflagration and explosion but from flood, hurricane and so on, to mobilize rescue, fire fighting, medical, law enforcement and other agencies. During the war a majority of American communities developed 'disaster' and 'preparedness' plans and programs. These should not be permitted to die but should be retained.

NEW PORTABLE VENTILATOR

Reduces Smoke Hazards

and free of rubbish, Zumwalt said.

Residents returned to their rooms about 10 p. m. after smoke was cleared from rooms and the inner court by ventilation and the fire department's Nelson portable ventilator, a high powered suction fan device, which Zumwalt credited with lessening what might have been considerable smoke damage.

Firemen maintained a fire

FOR MANY YEARS a satisfactory, portable "smoke extractor" has been sought by fire departments as an aid in fighting small fires where areas become heavily charged with smoke.

Now this need is met by application of the new

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(with blow-through or draw-through action)

This light-weight, high-powered, portable ventilating fan is easily wheeled or carried from place to place. Its unique, two-way air flow feature permits drawing smoke, dust or gases from an area, or later supplying fresh, cooling air to the spot desired. Equipment includes one 14" diameter by 16' length of specially treated, collapsible canvas duct. Ducts can be attached simultaneously to inlet and discharge sides of fan.

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Television Hazards?

Tenants of New York City apartment houses have been warned by owners of buildings that they cannot use television receivers in their homes at present because of complications in erecting suitable aerials for the sets.

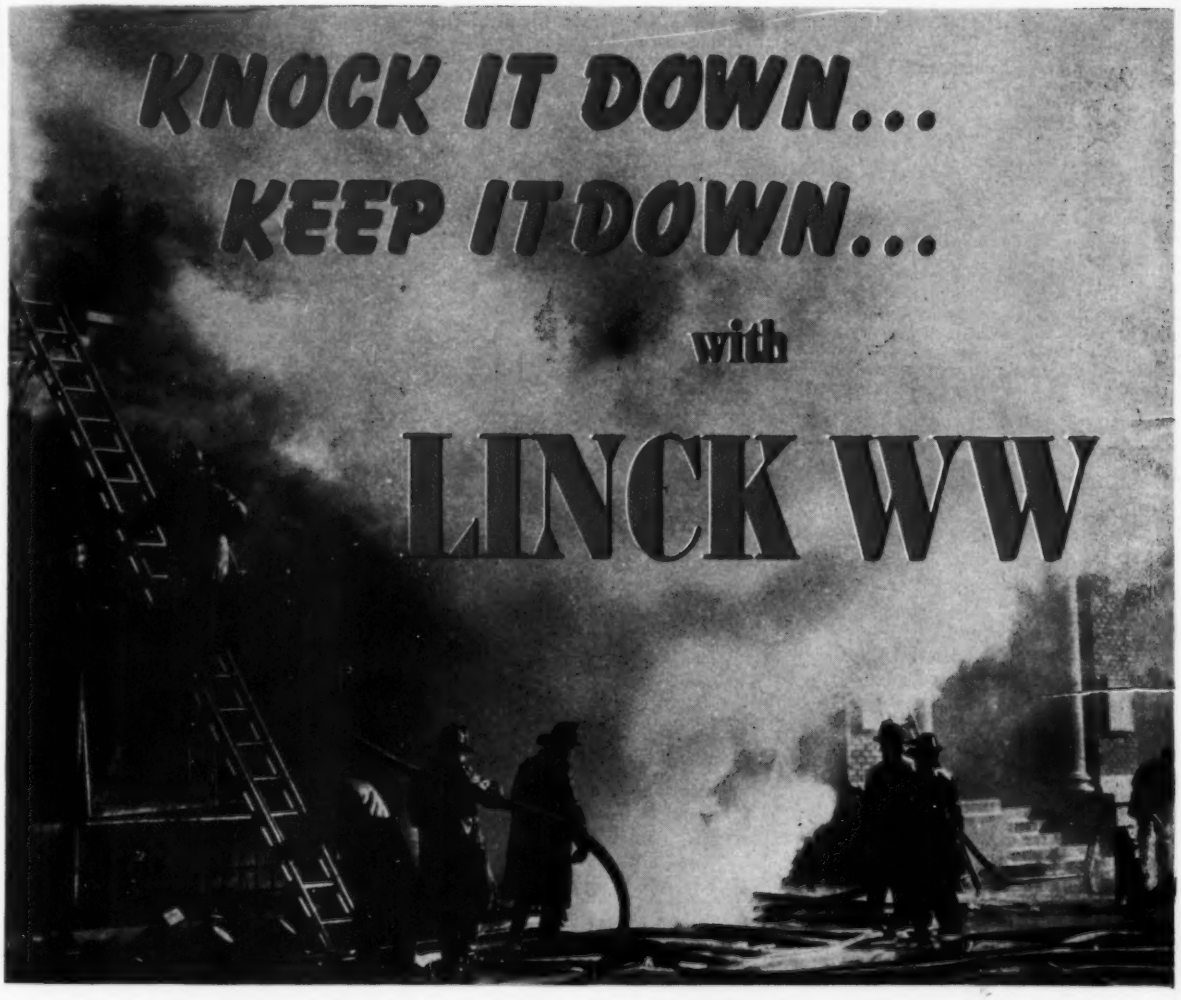
Specifically, management concerns say there is not enough room on the roofs of the multiple dwelings for the elaborate individual antenna arrays currently required by video. Reception of telecasts in the apartments, agents stated, would have to await the perfection of a master aerial system serving all tenants.

Thus far, it is said no objection has been raised by the city's Building and Fire Departments to installation of video aerials and/or cable although some concern is expressed by fire department officials over the possible complications such installations may raise to roof and ladder operations on structures so equipped.

Overzealous Volunteer Jailed

Herbert E. Rittman, 22, a volunteer member of the East Hampton, Conn., Fire Company, with a penchant for starting fires so he could race the East Hampton apparatus to the scene, pleaded guilty in Superior Court, Middletown, Conn., on April 2, to four counts of arson.

Judge Ernest A. Inglis sentenced Rittman, who had been connected with the East Hampton Fire Company for two and one-half years, to six months in jail on each count, the sentences to run concurrently. TOM MAGNER



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New Jersey Fire Training

(Continued from page 307)

N. J., Newark, New Jersey; "Protective Masks & Artificial & Mechanical Resuscitation", John Weeks, Deputy Chief, Fire Department, Newark, N. J., demonstration by Newark Fire Department rescue squad.

June 17, "Automatic Sprinkler Systems, Standpipes & Hose Streams", simple hydraulics for quick calculation, relay pumping, care and maintenance of hose, blackboard demonstration to be used on the above subjects and if possible, a small portable sprinkler system to be demonstrated, Harry J. Sommers, Deputy Chief, Fire Department, Newark, N. J.; "Salvage Operations During Progress of and After Fires", Demonstration by Newark Salvage Corps.

June 24, "Fire Gases", Harold J. Seagrave, Mechanical Engineer, District Manager, Mine Safety Appliances Company, New York City, Film—"Fire Causes"—New Jersey Department of Labor; "Fire Inspection, The Right Arm of Fire Protection", H. R. Bogardus, Mechanical Engineer, Asst. Superintendent, Department of Engineering, Fire Rating Organization of New Jersey, Newark, N. J.

The cooperating organizations are: New Jersey State Fire Chiefs Association, Fire Fighters' Club of Newark Safety Council, The Fire Ins. Rating Organization of N. J., American Society of Safety Engineers, N. J. Chapter, New Jersey Association of Insurance Agents, National Board of Fire Underwriters, New Jersey State Firemen's Association, U. S. Dept. of Interior, Bureau of Mines, Essex County Insurance Agent Association, Underwriters' Laboratories, Inc., N. J. State Department of Labor.

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Aerials Used with Good Effect on Plant Fire

Fire, originating from unknown causes, gutted a 3-story plant of the Howard Furnace and Foundry Company, manufacturers of air conditioning and heating units in Toronto, Ont., recently. The fire was noticed by a passer-by, who saw the red glare on the windows on the second floor. He pulled Box 511 at 9:25 P.M. The first alarm sections arrived shortly thereafter with District Chief Baker in charge, and they only had about two blocks to go to the fire from Fire Station No. 10, Yorkville Ave.

They found smoke and flames issuing from the windows on the second floor of the plant. The District Chief immediately pulled a second alarm. This was received at the Fire Department switchboard at 9:29 P.M.

The first alarm companies stretched three lines from the Yonge St. side, and when the second alarm sections arrived, with Deputy Chief Peter Herd, they laid out more lines on the north and south side of the plant. When the flames appeared from the windows on the third floor, Chief Herd immediately sent in a third alarm, this at 9:40 P.M. One aerial was placed on the north side of the plant and also one on the south side, and heavy streams were played into the fire from ladder nozzles on the aerial, both doing excellent work.

When the third alarm sections arrived, with Chief George Sinclair in charge, the whole third floor of the plant was involved. More streams were brought into play from deck guns and also from ladders on all sides of the plant. It was a hard fire to fight due to the location of the plant on a hill. The streets on each side, as well as at the rear, were of steep grade and it was difficult to place the equipment. The heavy steel sash in the factory windows made it difficult to get into the plant.

About 10 P.M. part of the roof caved in. This sent flames high into the air as well as showering the district with embers. The firefighters were able to enter the building, when this opening provided ventilation, and at 10:30 P.M. the fire was under control.

Fire Department Response

Equipment at fire included the following:

First alarm: 2 pumpers, 1 100-ft. aerial, 1 ladder truck, and Dist. Chief Charles Baker.

Second alarm: 4 pumpers, 1 aerial, 100 ft., 1 city service truck, salvage truck, Consumers Gas Co. emergency car, hydro emergency, water works emergency, Toronto Transportation emergency, Deputy Chief Peter Herd, Asst. Chief Albert Steen (Acting), and Dr. Ralph, fire department surgeon.

Third alarm: 3 pumpers, 2 ladder trucks, Chief George Sinclair, Chief of Motor Shop, Chief of Fire Alarm Telegraph.—JOHN KARL LEE.

"Second Alarmers"

(*Continued from page 306*)

or on the fire ground to spread the news and get action.

During 1946 the "Second Aiarmers" answered 140 calls of which six were outside Philadelphia. Frequently the association is called upon for assistance by suburban neighboring communities. At any time a company of the Philadelphia Fire Department responds to an out-of-town call, the association dispatches one of its coffee wagons. During the 1936-37 Pennsylvania floods, a truck was sent to Sunbury, Pa., and operated for a period of four days. Calls have been answered from as far away as Linden, N. J., and response has been made to several general alarm fires in Atlantic City.

Answering the question how can the association operate with so few members, and such modest prescribed dues, Secretary Farley reports that each year the association puts out a "contributing membership" card to each fire station and police district, for which the association asks a donation of $1.00. The cards are also put out to buffs who might be interested in getting a cup of hot coffee in cold weather or a cold drink in the summertime. Thus, should any civilian having one of these cards be at the scene of a fire where the "Second Alarmers" are operating, all he has to do is to show the card and he receives the same service as do Firemen and Policemen.

The association also serves where large details of Fire or Police may be stationed, such as the Annual Mummers' Day Parade, held each year on New Year's Day. This year's parade was held during a snow storm and the organization's trucks covered the entire route of the parade, serving the Police stationed at each intersection and along the line of march. On this occasion 115 gallons of hot coffee were dispensed.

Secretary Farley, through FIRE ENGINEERING, extends an invitation to members of other buffs organizations or others interested in the welfare of Fire and Police to visit the Association Headquarters at 51st and Sansom streets.

Danbury Has Epidemic of Fires

A firebug's reign of terror that started at 9 P.M. on April 3, and ended at 2:30 the following morning, during which ten fires of incendiary origin broke out in various sections of Danbury, Conn., including one at the Star Hotel which extensively damaged the 65-room structure, was subject of fire, local and state police departments' investigation.

The hotel fire was discovered by a passerby who, after seeing smoke pouring from the building, turned in an alarm at 10:52 P.M., from Box 27, White Street and Maple Avenue. When Fire Chief John C. McNamara arrived on the scene, he found the fire had spread with rapidity and up an open stairwell, had reached the fourth floor and broken through the roof. He ordered a general alarm sounded at 10:55 P.M., which brought all Danbury apparatus to the scene. Nearly 200 firemen from 11 paid and volunteer fire companies fought the flames.

Damage to the hotel building and contents was estimated at from $20,000 to $25,000. On the upper floors, many of the rooms were badly damaged.

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"Streamlined" Eureka is the completely engineered fire hose. Only in Eureka do you find Smooth Interior Filler Ply, which provides maximum nozzle pressure.

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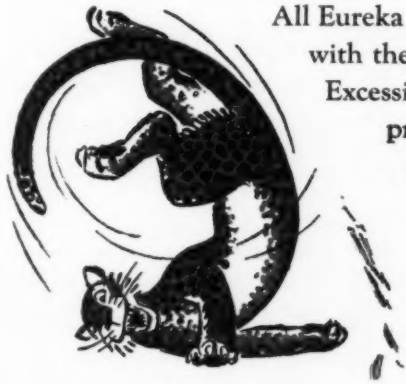

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Other fires discovered during the "reign of terror" were a fire in the second floor office of the Allen-O'Brien Insurance Agency, 181 Main Street; an automobile owned by Anthony Gallo, parked on White Street, in which rags were found wrapped around a hot exhaust pipe on the car, smouldering, causing the smoke; fire in a warehouse of the Seaman-Lynch Hardware Company, near Fire Headquarters on Ives Street. Investigation disclosed that entrance to the building was gained by breaking a window.

While returning from this fire, the firemen found that a window had been smashed in the department's repair shop building in the rear of the Ives Street Fire Headquarters.

The next fire was discovered at 9:45 P.M., in a car parked on National Place. The blaze was in the upholstery. At 10:25 P.M., the next call was received. This was for an automobile parked on Stevens Lane. Again the fire was in the car's upholstery. While leaving Maiden Lane, on their way back to Headquarters, firemen discovered another blaze. This was in a bale of fur which had been pushed against the Pruman Fur Company's building, Stevens Lane.

While returning from a grass fire on Clapboard Ridge, which was brought under control without incident, firemen spotted a blaze in the rear of Mac's Men's Store, 280 Main Street. Again it was found that debris had been piled against the building. Damage was slight.

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Tough, reliable Quaker Modern Municipal Fire Hose, in easy-fold construction, is highly flexible . . . provides more compact storage . . . allows up to a third more additional footage in truck bed.

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At 2 A.M., employes in the roundhouse of the New Haven Railroad heard the sprinkler bell, on the factory of John W. Green & Sons Hat factory on Pahquioque Avenue, sounding. Going to the factory, the railroaders found five separate fires had been started on the third floor of the building. An alarm was sounded from Box 7, nearby. Quick action on the part of the weary fire-fighters saved this building from destruction. The last call came at 2:28 A.M., from Box 28, Maple and Union Avenues, which proved to be a false alarm.

Shortly after 8 A.M., the following morning, employes of the Federal Glass Company on Elm Street discovered the lock on a storage warehouse in the rear of the establishment had been broken during the night. Checking the interior of the building, employes found a fire had been started underneath a pile of wooden frames used in transporting glass. However, because of the thickness of the wood, the fire burned itself out before causing extensive damage. Fire officials also attributed this blaze as of incendiary origin. TOM MAGNER

Heavy Loss at Boat Club Fire

The Argo Rowing Club situated on Lake Shore Drive in the west end of Toronto, Ont., on the shores of Lake Ontario, was totally destroyed by fire that originated from an unknown cause. The building was two and a half stories in height and frame, covered with stucco, with docks and boat houses on the lower part of the building.

The fire was discovered by a citizen, who pulled Box 397. This was received at the Fire Department switchboard at 2:07 A.M. When the first alarm sections arrived, they found the entire club buildings hidden by dense clouds of smoke. The district chief ordered a second alarm to be transmitted, this at 2:12 A.M.

When the sections which responded on the second alarm arrived, they found the flames coming through the roof of the club. Several streams were used to keep the flames from reaching a large three-story house within 20 feet of the club house. The fire was fought from all sides of the building, and during the course of the fire a large number of the club members came to assist the firemen, and also were able to save a few of the valuable trophies.

Response to alarms was as follows:

First alarm sections: 2 engine companies, one 100-ft. aerial. 10 2½-in. lines used from pumpers.

Second alarm sections: 3 engine companies, one 100-ft. aerial, one city service truck, and one salvage truck.

Chief George Sinclair and Deputy Chief Peter Herd responded on the second alarm, which also brought an emergency car. Additional police had to be called to keep the large crowd back.—JOHN KARL LEE.

New York Goes After Basements

Concerned over the growing number and the seriousness of fires in mercantile occupancies, particularly basements of department stores, five-and-ten cent stores and regular bargain basement stores, the New York Fire Department, through the Division of Combustibles and Fire Prevention, Deputy Chief David J. Kidney in charge, is going to

devote special attention to these occupancies.

In Special Order No. 67, issued April 15, 1947, over the name of Frank J. Quayle, Fire Commissioner, commanders of companies are directed to institute inspections of all basements in these occupancies in their company districts, giving attention to the necessity of sprinkler protection and adequacy of exits. Stairways to the streets will be particularly noted because the department has found that in some cases the stairway to the first floor is the only exit.

Company commanders will refer hazardous cases to the Division of Fire Prevention for examination and the issuance of the necessary orders on owners and occupants.

Burke Tops N. Y. Chief List

The New York Municipal Civil Service Commission has announced that Deputy Chief Harold J. Burke headed the list of candidates in the recent examination for Chief of the New York City Fire Department.

Harold J. Burke

Burke's rating was 89.050. The seven other Deputy Chiefs who made the list but with marks a little lower than the winner's, were Edward Connors, John J. T. Waldron, Peter Loftus, John L. Holian, Edward M. Conway, Richard Burke and Daniel A. Deasy.

It was the first examination of its kind since 1932. The post had been vacant since the resignation of Patrick J. Walsh who was both Chief of the Department and Fire Commissioner.

A veteran of both world wars, Chief Burke was credited in the last war with formulating the Navy's fire fighting program. Having joined the Fire Department on March 1, 1920, he was granted a leave of absence to join the Navy on February 3, 1941. The day after Pearl Harbor, Admiral Chester Nimitz ordered him to Washington and told him, "Write your own ticket." Burke established fire fighting training schools and taught men who later formed fire combat teams, protecting the Navy's forces in all major operations.

He rose from naval lieutenant to captain by December 1, 1945, and was awarded the Legion of Merit for outstanding service as officer-in-charge of fire protection, Bureau of Ships. He returned to the Fire Department on January 1, 1946.

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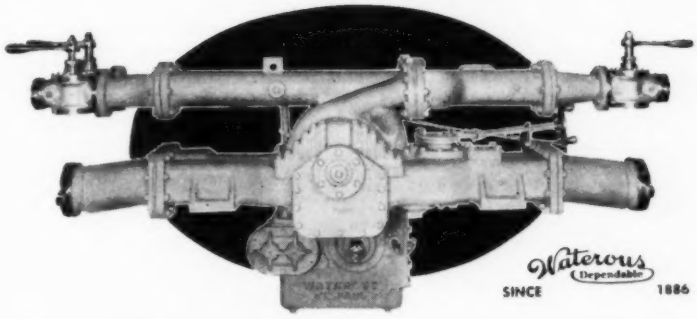

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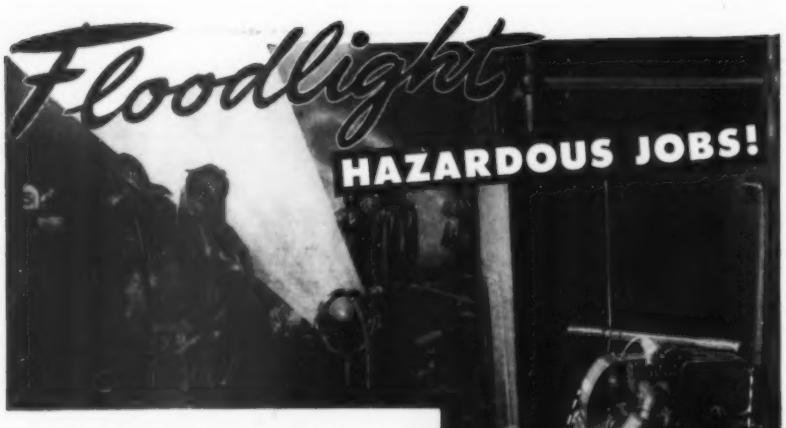

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Ready for instant use, compact, lightweight Onan Electric Plants provide dependable power *when you need it and where you need it.* Can be easily carried into trouble areas. Fit into small space for truck installations.

High-tension ignition provides a hot spark for easy starting.

Four Twistlock receptacles permit direct plug-in of lights and motor-driven tools. Guarded pilot light gives ample illumination for operating.

Onan plants for fire-department applications are available in capacities from 350 to 4000 watts, powered by one and two-cylinder, 4-cycle air-cooled engines.

ONAN ELECTRIC PLANTS are available in many sizes and models. ALTERNATING CURRENT: 350 to 35,000 watts in all standard voltages and frequencies. DIRECT CURRENT: 600 to 10,000 watts, 115 and 230 volts. BATTERY CHARGERS: 500 to 3,500 watts; 6, 12, 24, 32 volts.

Plant shown is Model 15 DL-14, 1500 Watts, 115-Volt D. C.

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HOWE Can Supply Any Body Style Desired.

HOWE FIRE APPARATUS CO. Established 1872 1402 West 22nd Street Anderson, Indiana

News of the Manufacturers

(*Continued from page* 311)

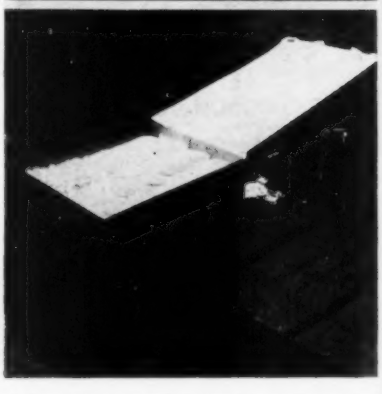
Mack Appoints Rowold

The appointment of Henry Rowold as Assistant General Manager of Mack-International Motor Truck Corporation was recently announced by A. C. Fetzer, Vice-President and General Sales Manager. Mr. Rowold, also a vice president of the company, combines his new duties with those of National Accounts Manager.

Fire Control for Dip Tanks

New foam fire fighting equipment for industrial plants' dip and quenching tanks and drainboards has been announced by National Foam System, Inc., of Philadelphia.

The new dip tank and drainboard units are made in three standard sizes for five different water pressures. The preferred operating pressure range is between 20 and 50 psi. Pressures up to 100 psi may be used in dip tank fire fighting equipment.



Above: Fig. 1, Showing Gasoline in Tank Afire Below: Fig. 2, Fire Out, and Foam Still Flowing from Unit

Aer-o-foam liquid, developed by National Foam, produces a tightly cohesive, smothering foam when 0.6 percent Aer-o-foam is mixed with 9.4 percent water (fresh or salt) and 90 percent air. The new dip tank and drainboard equipment consists of a brass foam maker body for mixing the Aer-o-foam with air and water, a steel discharge tube and steel deflector box.

The foam passes directly onto and down the deflector box to flow onto and

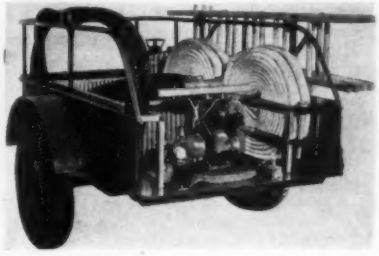
across the burning surface of the tank. A gas tight foam blanket is formed and remains after the tank cools to normal temperature.

Operation of the equipment is shown in the accompanying illustrations. Figure 1 shows a 10 by 10 ft. steel tank about 3 ft. high. Two hundred gallons are ignited and allowed to burn for one minute. Foam from the small tank at lower right, when applied at 30 psi pressure, gives coverage in 10 to 15 seconds, control in 25 to 30 seconds, and complete extinguishment in 60 seconds. Figure 2 shows the fire out.

Porto-Pumper Announced

Porto-Pumps, Inc., of 227 Iron St., Detroit 7, Mich., recently announced a trailer fire-fighting unit.

It carries a 48 x 78 inch steel box body mounted on heavy duty tires of standard automobile center-to-center



Porto-Pumper, Fitted with Porto-Pump, Fire Hose, Nozzles, Ladders, Extinguisher, and Axe

track. The overall width is 66 inches. Overall length, including a 40-inch tongue, is 118 inches. It is fitted with a handrail on three sides. Tailgate is hinge-mounted.

The pump is independently powered, capable of delivering over 40 U. S. gallons of water per minute at 120 pounds pressure. A four-cycle, 5 H. P. gasoline engine is mounted integrally with the pump.

Held in position at the rear of the trailer by a patented locking device, the Porto-Pump is quickly demountable. It may then be used at any distance from the pumper as an independent unit. A webfoot base plate prevents sinking into soft ground.

Hose equipment consists of 325 feet of hose. Three 25-foot lengths of metal-reinforced 2" agricultural suction hose supply the pump. Two hundred and fifty feet of 1½" fire hose is carried in fifty-foot lengths. A siamese connection provides for the use of one or two lines. Nozzles of ¼" and 5/16" diameter are furnished, as well as a hydrant adapter, which fits the suction hose to standard hydrant outlets.

New "ALFCO" Book

"A free book offered as a public service" is the way American-La France-Foamite Corporation, Elmira, N. Y., terms its new 24-page illustrated book entitled "What You Should Know About Modern Fire-Fighting Devices."

The book is educational in nature and not only describes, but illustrates the proper use of the various types of fire-fighting devices for the class of fire for which each is intended. It is a complete

Stream-spray — or fog mist. You get them all with the adjustable nozzle. Whatever the fire fighting job an *Indian* will do it.

Now is the time to plan your fire fighting equipment for the future. Include plenty of *Indian Fire Pumps*. Only clear water used—no chemicals. 5 gal. tank carries slung on the back.

Says INDIAN FIRE PUMPS are as Valuable as Pumper!

D. B. Smith & Company
Utica, New York

Gentlemen:
Please rush this order for No. 90B Indian Fire Pumps. This makes 8 of these units in our fire department. They are as valuable to us as a 500-gallon pumper.

Yours very truly,
Norman H. Koch
c/o Weatherly Fire Department

D. B. SMITH & CO. 411 Main St. • Utica 2, New York

PACIFIC COAST BRANCHES:
HERCULES EQUIPMENT & RUBBER CO.
435 Brannan St., San Francisco, Cal.

ROY G. DAVIS CO.
617 E. Third St.
Los Angeles 13, Cal.

FRED E. BARNETT CO.
2005 S. E. 8th Ave.
Portland, Ore.

FRED E. BARNETT CO.
600 Spring St.
Klamath Falls, Ore.

MILL & MINE SUPPLY
2700 Fourth Ave. S.
Seattle, Wash.

FRED E. BARNETT CO.
Broadway & Harris St., Eureka, Cal.

CANADA AGENTS:
BINGHAM & HOBBS EQUIP. CO.
395 W. 5th Ave.
Vancouver, Canada

DUKE EQUIP. CO.
297 Duke St.
Montreal 3, Canada

Our Hat is in the Ring!

WE CHALLENGE COMPARISONS

Gorman-Rupp engineers, with long experience in pump design, have perfected what we consider the best lightweight portable fire fighting pump built. The "Dual Fire Fighter" is invaluable as a booster pump when the big truck pumper cannot get to a source of water. Weighing only 155 pounds, it can be easily carried by two men to the nearest water supply. It is primed by an ingenious exhaust primer in from 15 to 30 seconds and will relay 175 gallons of water over a 30 to 50 foot hill through 300 feet of 2½ inch hose. This will supply four ⅜ inch nozzles each delivering 40 gallons at 90 pounds.

The Dual Fire Fighter can also be used to fight fires direct when the truck pumper is not available or is impracticable.

Carry a Dual Fire Fighter on the truck pumper. You may save its small cost in one operation.

Complete information is contained in our bulletin FD-3.

Some territory open for live distributors.

THE GORMAN-RUPP COMPANY

BOWMAN STREET • MANSFIELD, OHIO

SOUTHERN SWITCH & SIGNAL CO. INC.

For Over 21 Years Manufacturers of

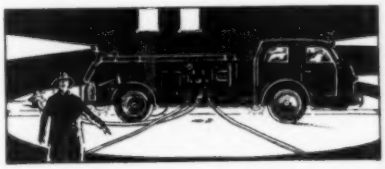
FIRE ALARM, TRAFFIC & RAILWAY EQUIPMENT

P. O. BOX 1303 SHREVEPORT, LA.

and comprehensive pamphlet on how to quickly stop small fires from becoming big blazes.

Novel Lighting Equipment

The Tomco Products, Inc., of 4321 Lake Heights Blvd., Canton 7, Ohio, has recently placed on the market novel floodlighting equipment for fire apparatus. It consists of under-chassis lights which illuminate a large area around the apparatus whether en route to or from a fire, or on the fire grounds.



Tomco Fire Apparatus Floodlights Installed Under Truck Chassis

Some of the advantages of these lights, according to the manufacturer are: makes it safer for men working around apparatus at fire; low flood beam makes road visible when driving in fog; aids in hydrant spotting, and makes hose and equipment visible on all sides of trucks.

The accompanying sketch shows a fire truck equipped with lights, which are illuminating area around unit.

Goodrich Produces Fire Coat

What should a fire coat be and what should it do to protect the wearer? The B. F. Goodrich Company, Akron, Ohio, has produced a new garment to add to its line of fire coats, which embodies the thoughts and suggestions of fire chiefs and firemen.

New Goodrich Fire Coat

The new fire coat is designed to give extra protection against the weather, with a detachable inner snap-on lining of Melton fleece. It has non-binding Raglan shoulders, allowing freedom to the wearer; elastic wrist cuffs which fit snugly about the arms to check seepage of water. The seams on sleeves and shoulders are cemented, vulcanized and strapped with reinforcing rubber, and

the coat is double-riveted at points of greatest strain.

Pockets are fitted with special drainage arrangements; there is a short, soft collar, and quick-fastening harness straps and deerings on the fly front. The coat is 46 inches long, made in regular sizes from 36 to 46 and extra sizes from 48 to 54.

Fetzer Advanced by Mack

Announcement is made of the election of Mr. A. C. Fetzer, Vice-President, to the Board of Directors of Mack Manufacturing Corporation. Mr. Fetzer, who was Acting General Sales Manager, was at the same time appointed General Sales Manager.

Persons in the News

Ex-Chief F.A. Trowbridge Dead

Fred Trowbridge, 77, former fire chief of Morristown, N. J., and in recent years secretary of the New Jersey Firemen's Association, died March 29 at his home in that city.

Born in Morristown on January 12, 1870, he moved to Boonton at an early age and resided there until he returned to Morristown in 1888.

Following graduation from Boonton High School he became associated with a sporting goods concern in New York City. In July, 1899, he left this concern and opened a bicycle and sporting goods shop in Morristown, which he operated until his retirement in 1942.

In 1943 he was elected secretary of the New Jersey State Firemen's Relief Association with headquarters in Newark and held this office at the time of his death. He was treasurer of the Morristown Firemen's Relief Association for over thirty years and served as secretary of the New Jersey State Fire Chiefs' Association for many years. The meeting of this organization on March 22 was the first he missed in twenty-seven years. He was a member of the Resolute Hook & Ladder Fire Co. and former Chief of the Morristown Fire Department.

Graham Made Safety Director at N.B.S.

Dr. E. U. Condon, Director of the National Bureau of Standards, has announced the appointment of Donald I. Graham, Jr., as Safety Director of the Bureau and Chief of the Safety Section. Mr. Graham comes to the Bureau from the Safety and Security Division of the Office of the Chief of Ordnance, War Department, where he has been engaged in safety studies with regard to the handling, storage, and destruction of military explosives.

As Chief of the Safety Section, Mr. Graham will be responsible for safety and accident prevention programs, inspections to insure compliance with safety orders, and the initiation of new measures and safety policies in laboratories and plant.

Mr. Graham is an honor graduate in civil engineering of Northwestern University. He has worked as safety direc-

CHIEF POWHATAN
REG. U.S. PAT. OFF.

offers a Complete Line of—

FIRE PREVENTION PRODUCTS

of the Better Kind

PLATE 112

CHEMICAL or BOOSTER SHUT-OFF NOZZLE

These are but two of the many items we manufacture for fire departments. And we've been at it since 1892—the many repeat orders from fire departments throughout the country indicate to the fullest that POWHATAN fire prevention products have proven their value.

We know from the experience we have gained throughout these many years that our engineering department can take care of your particular requirements.

POWHATAN---
CELLAR NOZZLE
BALL BEARING

Bulletin Nos. 5 and 6 will illustrate many fire fighting requirements.

PLATE 104

POWHATAN BRASS & IRON WORKS
RANSON, WEST VIRGINIA
Phones 93 & 94 Charles Town West Virginia – Established 1892

THE NEW
LOW PRICED
WHEAT
Rechargeable Spotlight

MODEL
158

NOW AVAILABLE FROM STOCK—
ADAPTABLE TO ANY REDUCED
BUDGET

FEATURES

- Less expensive operation than dry cells.
- Free use of hands. Light carries conveniently on shoulder strap.
- Positive "Non-spill" construction.
- Light can be focused and directed as desired.
- Weighs only 92 ozs. complete.
- Simple to charge and water. No need to take lamp apart.
- Low price and operating cost make Wheat adaptable to any reduced budget.

2,500 FOOT BEAM
25,000 CANDLE POWER
1,000 HOURS OPERATION

KOEHLER MFG. CO.
MARLBORO, MASSACHUSETTS

tor and fire protection engineer for a number of major construction projects, and for the Western Factory Insurance Association. In 1941 he became Director of Safety and Fire Prevention for various military explosives and rocket powder plants of the E. I. duPont de Nemours and Company, including the Kankakee Ordnance Works, which was adjudged the safest military explosives plant in the country. In 1943 he was transferred to the Hanford Engineer Works, Richland, Washington, where he established the safety program for the government's atomic energy project there.

Chief W. J. Noble Retires

Chief William J. Noble, who served the City of New Britain, Conn., for fifty-two years, twenty-seven of which he spent as Fire Chief, retired on March 31.

The Chief was appointed a substitute callman in April, 1895, became a regular substitute in 1898, advanced to the rank of foreman on July 1, 1903, went on to become assistant chief July 1, 1905, and rose to chief on March 20, 1920.

Chief Noble is a member of the New England Association of Fire Chiefs and the International Association of Fire Chiefs. He has served as Treasurer of the Firemen's Relief Association of New Britain for thirty-six years.

Appointments and Promotions

OKLAHOMA CITY, OKLA. — Roy Templeton, Chief Deputy State Fire Marshal, has been appointed State Fire Marshal to succeed T. J. Ellis, upon approval of the Senate. The new appointee was at one time a member of the Tulsa, Okla., Fire Department and later he became associated with the Okmulgee Fire Department, where he was promoted to the rank of Assistant Chief.

SALEM, ORE.—W. P. Roble took over the duties of Chief of the Salem Fire Department March 1, and immediately undertook improvements to modernize the department.

MUNCIE, IND. — W. Clifford (Cliff) Risher is the newly appointed Chief of the Muncie, Ind., Fire Department, succeeding the late Archie McCabe.

BRIGHTON, COLO. — Jack Ferguson, elected Chief of Brighton Fire Department to succeed Wm. R. Graves. Floyd Vienot named Assistant Chief.

LE ROY, N. Y.—Leo B. Rooney becomes Chief of the Le Roy Fire Department for two years, succeeding Chief Joseph Lapp, who retired.

LARCHMONT, N. Y. — F. Mortimer Taylor was elected Fire Chief to succeed Chief James Brennan.

ANTLER, N. D.—F. J. Manning elected Fire Chief.

CLINTONVILLE, WIS. — Edward DeFrane succeeded Martin Lyon as Fire Chief, the latter resigning after twenty-eight years of service.

BURRVILLE, CONN.—Anthony J. Roman was elected Fire Chief to succeed William J. Canty who resigned March 12.

ALBIA, IA.—Charles Rowe named Fire Chief; Pliny Samuels is Assistant Chief.

LISBON, IA.—Lisbon firemen elected Frank Carbee as Fire Chief and Preston McCall, Assistant Chief of the local fire department.

Better
FIRE STATION DESIGN

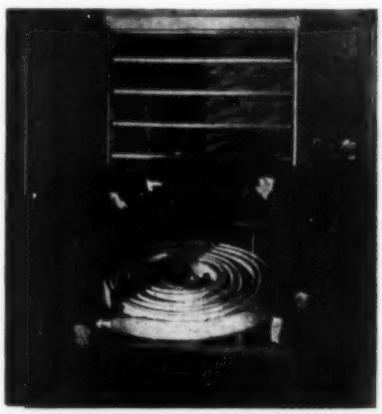
with
CIRCUL-AIR
THE AIR-CONDITIONING
FIRE HOSE DRYER

In eliminating the unsightly hose tower and cumbersome rack and the "dead" space they involve your architect can plan a really attractive station of functional design. The thousands of dollars saved in construction costs could provide a lot of other needed equipment. DON'T give your modern fire dept. an old-fashioned home.

Better
HOSE DRYING

Chiefs and firemen prefer this modern ELECTRO-MECHANICAL DRYER because it: (1) does a better job in a fraction of the time; (2) saves most of the hard work; (3) takes up so little floor space; (4) is ideal for hose storage; (5) lessens need for large hose reserves; (6) dries clothing as well as hose.

CIRCUL-AIR is ideal for *fire stations of any size* . . . indeed many larger cities have re-ordered for additional houses after initial installations have proved it the fastest, easiest and most economical drying medium.



THE CIRCUL-AIR CORPORATION
575 East Milwaukee Street
DETROIT 2 MICHIGAN

MERRILL, IA.—Merrill Volunteer Fire Department elected Joe Erpelding to succeed Walter Elskamp, who resigned after several years' as head of the department. Clarence Vanderloo was elected Assistant Chief.

WAPELLO, IA.—Robert Lewis elected Chief.

HORTONVILLE, N. Y. — Charles W. Fisher, World War II veteran, was elected Chief of the Hortonville Fire Department, to succeed William Rosenberger who declined to serve longer, after tenure of several years.

HAZELTON, PA. — Albert Bindon appointed Chief of the local department.

MALDEN, MASS.—Captain George E. Maher appointed Deputy Fire Chief.

TAUNTON, MASS. — Captain James Frank Lyons named Deputy Fire Chief.

Retirements

PELHAM MANOR, N. Y. — Nelson Rundlett, Chief of the Pelham Manor Fire Department, retired in March, owing to ill health. He succeeded former Fire Chief John Brennan in 1944, when the latter left the fire service. Brennan, a former New York City Battalion chief, led the Pelham Manor department for many years. Chief Rundlett's successor will be chosen from the civil service list.

CASSVILLE, WIS.—Henry Dietrich, for forty years a member of the Cassville Fire Department and chief for thirteen years, resigned in March. Walter Okey is the new Chief. Dietrich will serve as assistant chief.

GARDINER, N. Y.—John Moran, retiring Chief of the Gardiner Fire Department, was honored at the department's annual banquet for serving as head of the department thirty-five years. Lawson Upright was elected Chief.

NEWPORT, PA.—George M. Acker, for twenty years Assistant Chief of the Newport Citizens Fire Company, resigned.

SAUGERTIES, N. Y.—Roy Palmer, retiring Chief of the Saugerties Fire Department, was honored at the annual Chief's Night of the department, being presented with a gold wrist watch and chief's badge. The new Chief is Philip Breithaupt.

World Wide Fire News

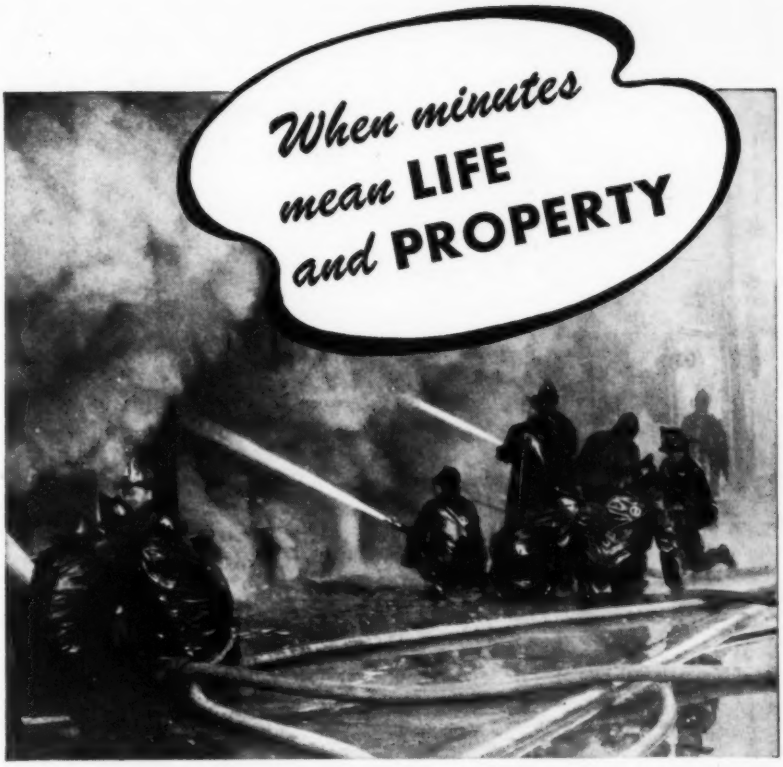
By Roi B. Woolley

More Details on Corinthic Fire

The method employed by the National Fire Service of Birkenhead, England to extinguish a severe fire in the hold of the new $5,000,000 liner Corinthic, and to prevent the ship capsizing like the Normandie, from the Niagaras of water poured into it in extinguishing the fire, was effective.

The fire occurred in No. 5 hold of the 15,000-ton liner, gutting it and causing damage to No. 4 hold, immediately forward. After a twenty-hour fight, the fire was extinguished, but not until the refrigeration insulation in No. 4 hold was hurriedly stripped to prevent extension of the fire into that area. Shell plates, deck and bulkhead plates, and supporting stringers of No. 5 hold were damaged and deck and bulkhead plates of No. 4 hold showed signs of buckling.

Some 300 firemen, aided by shipyard



MANHATTAN FIRE HOSE

is dependable . . . and easy to handle

When fire hose is needed most, it has to be handled fast. The flat folding, easy-to-handle construction of all Manhattan Fire Hose often makes the difference in getting the jump on a dangerous flare-up . . . to save life and property.

Safety is Sure because every length of cotton rubber-lined fire hose is pressure tested at Manhattan's factory. Safety is Long Lasting because the balanced construction of all grades is made to withstand maximum dragging and external wear.

Thousands of fire departments specify Manhattan types of hose. Are you protected?

CHEMICAL ENGINE HOSE
Manhattan brands are used extensively by municipal and industrial fire departments on chemical apparatus.

BOOSTER HOSE
Especially designed to stand up under severe service.

FOAM HOSE
Developed to insure long, safe usage on the growing number of Foam Extinguishers and apparatus.

SUCTION HOSE
Flexible, withstands hard usage; resists collapsing. Long recognized as standard.

RAYBESTOS-MANHATTAN INC.
Keep Ahead with Manhattan
MANHATTAN RUBBER DIVISION PASSAIC, NEW JERSEY

TRADE MARK

MEARL FOAM

Produces
Tough Long Lasting
MECHANICAL
AIR-FOAM

INSENSITIVE
TO
ANY TYPE NOZZLE
ANY TYPE WATER
ANY TYPE WEATHER

Write for descriptive bulletin

APPROVED
FOR USE UNDER
JOINT ARMY-NAVY SPECIFICATIONS C-266 DEC. 4, 1945

THE MEARL CORPORATION
153 Waverly Place, New York 14, N. Y.

"HAHN" FIRE APPARATUS

SINCE 1907

FINEST IN THE WORLD * STREAM-LINED * BALANCED CHASSIS * AMPLY POWERED * VERY EFFICIENT PUMPS WITH PLENTY IN RESERVE

HAHN MOTORS, Inc.
HAMBURG, PA.

volunteers of the Messrs. Cammel Laird's yards, where the ship was berthed, were engaged in the action to save the vessel.

At one time during the operations there was danger of the ship capsizing after it developed a twenty degree list. By cutting a way through the port side, workmen in the yard enabled firemen to pump water into the portside tanks and so bring the ship onto an even keel. This was the maneuver that was unsuccessfully tried in the futile efforts to save the Normandie.

* * *

England Has Traffic Troubles Also

Although response by British fire apparatus to alarms is said not to be as speedy as that of American apparatus, units of the National Fire Service have had plenty of traffic accidents.

In a collision between a National Fire Service apparatus and a Hull corporation double-decker bus on a Saturday, one firemen and two other people were killed and fifty-eight more injured.

The bus was leaving the center of Hull, and the fire apparatus was responding to an alarm of fire. The crash came as the fire engine emerged from one street and was about to cross another narrow thoroughfare.—"Fire Protection"

* * *

Hot Off the News Ticker

In January, last, of 1,477 alarms responded to by Scottish NFS units, there were 204 false. Of these, 78 were recorded as malicious false alarms. . . . Great Britain's fire losses for 1946 were £11,868,000 or roughly $50,000,000. This is about the total lost in this country in an average month! . . . In Japan, twenty-eight persons were killed and eighty-three injured in April when an electric train caught fire and stalled inside the long Ikomayama railway tunnel between Osaka and Nara. . . . According to the Central News Agency Kuling, China's summer capital, was nearly destroyed by fire in April. The mountain town, summer home of Generalissimo and Mme. Chiang Kai-shek, burned, leaving 2,500 homeless. . . . In Japan, 800 houses in Aomori, on the northern tip of Honshu Island were destroyed by fire, while 400 houses burned the day before at a Sado Island fishing port. . . . A Navy court of inquiry in April closed its long investigation of the July 17, 1944, explosion at Port Chicago, Cal. unable, it is said, to determine cause of the blast, which killed 322 persons. . . . It is disclosed that a winter fire aboard the Swedish-American liner Krageholm was extinguished by use of fire-fighting chemicals dropped to the vessel by a night-flying plane. . . . A few weeks after the costly blaze on the British liner Corinthic, sparks from a welding torch caused another fire which was extinguished before it assumed serious proportions. . . . Plant of the Scandanavian Aero Industry, Denmark's only manufacturer of airplanes, was partially destroyed by fire with loss of $400,000. . . . Fire swept the old waterfront of the Swedish island of Marstand, destroying the City Hall, a hotel and several wooden buildings. Damage estimated at $200,000. . . . Bad news for Bacardi drinkers came from Cuba when it was reported that fire of undetermined origin swept through a warehouse of the Bacardi Rum Company at Santiago, Cuba, causing damage estimated at $4,000,000.

. . . Anyone wanting to make a big noise can bid in on WAA's offer of 27,000,000 lbs. of war surplus TNT. The explosive, which cost the government $3,000,000, will be peddled in lots of at least 1,500 lbs. It comes in crystals, flakes, pound, and pound and half-pound blocks.

* * *

Another Jersey City Ship Fire

Adding to the record of serious and not satisfactorily explained ship fires that have been upping fire losses here and abroad, was the two-alarm blaze on the 7,607-ton Maritime Commission freighter Honduras Victory at an American Export Lines pier in Jersey City, N. J., in April.

The intensely hot fire, fed by shipments of cork waste, was discovered in No. 4 hold, aft of the superstructure, at 3:20 P.M., and before fire apparatus and tugboats arrived the deck became so hot it was impossible to approach or remove the hatch.

Acting Deputy Fire Chief William Outwater ordered a second alarm and directed emergency crews in the cutting of holes in the sides of the vessel with acetylene torches. Through these openings firemen flooded the hold with water and live steam, bringing the blaze under control at 5:30 P.M.

The Coast Guard fireboat Mohican and a battery of tugs aided the land fire fighters. Besides furnishing steam, the tugs nosed against the Honduras Victory as she began to list to port to minimize the danger of capsizing.

Rocket Pistol Used in British Fire Service

A peacetime application of what is said to be a wartime development is being used in the National Fire Service of Great Britain for saving life and in fire fighting.

It is known as the "Schermuly" Pistol Rocket Apparatus and consists of a pistol built along the general lines of the life-gun used by this country's fire service except that it is smaller and need not be held against the shoulder. It is fitted with a rocket designed to, slip into the barrel, to which is attached a one-half inch life-line.

It is claimed that the rocket-pistol has a range of 125 to 150 yards horizontally and will throw a one-half inch line vertically to a height of 300 feet.

What's Burning

THE following list includes fires of $10,000 loss and over in the United States and Canada for the month of April, 1947.

Month Ending April 30, 1947

Los Angeles, Cal.—Farrar Industrial Products Co. plt. damaged.
Stamford, Conn.—Mohawk Auto Sales and Service Co. destroyed.
Bangor, Maine—Banks Bros. tire recapping plt. destroyed; adj. dwelling damaged.
Boston, Mass.—Joseph Burnett Co. extract plt. damaged. Compressor spark ignited alcohol fumes.
Clifton Forge, Va.—"Hillcrest" home of J. M. Emmett, north end, destroyed. Freezer unit exploded.
Amherst, N. S.—Hillcrest Mine, near Joggins, destroyed.
Ottawa, Ont.—Marine Signal Bldg. damaged.
Anchorage, Alaska—Big Time Lodge, Richardson Highway, destroyed.

LABORATORY TESTED

Insurance Against Unnecessary Fire Loss

Shuredry Green-Bak Salvage Covers

Fire losses cut! Fire chiefs all over the country are setting records of low fire losses by using laboratory-tested Shuredry Green-Bak Salvage Covers as protection from water and soot.

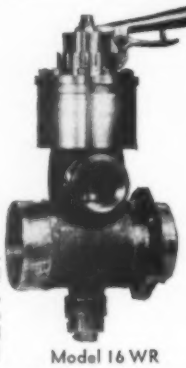
Subjected to tests for water penetration, seepage and resistance to cracking when folded, Shuredry won the approval of Factory Mutual Laboratory and the National Board of Underwriters.

An exclusively FULTON dry treatment makes Shuredry Green-Bak Salvage Covers *absolutely* water-proof, soft and pliant . . easy to handle even in the coldest weather! Order Shuredry Green-Bak Salvage Covers from your fire equipment dealer. Immediate shipment.

FULTON BAG & COTTON MILLS
MANUFACTURERS SINCE 1870
NEW ORLEANS ST. LOUIS DALLAS KANSAS CITY, KANSAS
DENVER ATLANTA MINNEAPOLIS NEW YORK

ROSS VALVES ARE BETTER!

FOR FIRE ENGINE RELIEF



All Bronze construction. Internal Pilot operated. (Super-structure chrome plated when specified.)

Model 16 WR

Pressure range 20 lbs. to 300 lbs. furnished with heating jacket.

FIRE ENGINE RELIEF VALVE
WR TYPE 300

MODEL 22 RWR TROJAN

All Bronze — Internal Pilot operated. Capacities 0 to 1500 G.P.M. at 120 lbs. pressure. Pressure Range 20 lbs. to 300 lbs. and 20 lbs. to 750 lbs.

HOSE VALVES FOR PRESSURE REDUCTION
ALL BRONZE construction
Internal Pilot
Sizes
2½ x 2½ inch
2½ to 3 inch
3 x 3 inch

ROSS VALVE MFG. CO.
INCORPORATED
P. O. BOX 595 TROY, N. Y.

Binghamton, N. Y. — Oxford Review-Times Bldg., Merithew Bldg. and Kelley's Liquor Store, damaged.
Coshocton, Ohio—James W. Clow & Sons Foundry destroyed.
Hughesville, Pa.—Mellen Mfg. Co. furniture plt. destroyed.
York, Pa.—McGann Mfg. Co., nearby Spring Garden Township, damaged.
Madison, Wis. — "Top Hat," night club, outskirts of town, damaged.
Cambridge, Mass.—Air Conditioning Engineering Co., East Cambridge, damaged.
Durham, N. C.—Durham Hotel No. 3; Texas Sandwich Shop, Elam's Photography studio and Warren's Valetor Service on East Main Street, and Wine Shop and American Cafe on Church St., damaged.
Hopkinton, R. I.—Hopkinton Woolen Mills damaged. Electric light bulb ignited cotton stock.
Newark, N. J.—Factory of Homecraft Mfg. Co., radio cabinet makers, damaged.
Lima, Ohio—Lima Municipal Airport, four miles west, destroyed. Acetylene torch.
Hood River, Ore.—Garrabrant bldg. destroyed; Edington bldg., Wirrinck bldg. damaged. Garrabrant Motor Car Co. damaged. Explosion, gas tanks.
Chester, S. C. — Bldg. housing equip. of the Chester Laundry and Dry Cleaning Co. practically destroyed.
Brownwood, Tex. — Friendship Baptist Church destroyed.
Kenosha, Wis.—Whse. occupied by Yule Truck Lines, May Beverage Co. and Landon Cartage Co., destroyed. Defective heating plt.
Tuscaloosa, Ala.—Thompson Swain Veneer Co. plt. destroyed.
Benton, Ill.—McCreery Lumber Co. yards, Sanders-Ludwig Implement Co., Busy Bee Restaurant, Southern Illinois Hatchery, Biebel Roofing Co., E. Blankenship & Co. and Webster School annex, damaged.
Salem, Ohio—First Baptist Church damaged.
Portland, Ore.—Rudie Wilhelm whse., Broderick & Bascomb Rope Co., Seagram Distillers Corp. offices, destroyed.
Dallas, Tex. — Lontos Cafe, Blitmore Beauty Shop, Guaranty Clothes Shop, Penny Arcade and Biltmore Auto Storage, damaged.
San Francisco, Cal.—Treasure Island Naval base in San Francisco Bay, one large bldg. and four smaller structures, destroyed. Valuable electronics equipment also destroyed.
Brigton, Ont.—Plt. of Canadian Canners, Ltd., destroyed.
Alton, Ill. — Acme Bowling Alleys bldg. destroyed.
Marquette, Mich.—Ajax Lumber Co. sawmill destroyed.
Richmond, Va.—Holzgrefe Bros. chick hatchery, Springfield Road, Henrico County, destroyed.
San Francisco, Cal.—Bldg. of Bank of America.
Yarmouth, N. S.—Factory of Millard Box Mfg. Co. destroyed.
Alsea, Ore. — Randall Bros.' garage, five adj. bldgs., destroyed. Short circuit.
Coos Bay, Ore. — Mountain States Power Co. transformer station damaged.
Belle Fourche, S. D.—Bentonite plt. and wool whse. destroyed.
Alexandria, Va. — Fruit Growers Express Co. yards, outside city, damaged.
Los Angeles, Cal.—National Furniture Co. destroyed; also Baron Bag Co. plt. destroyed; three dwellings damaged.
Turrell, Ark. — Turrell High School destroyed. Lightning.
Salisbury, Md.—Feldman Bros. Furniture Store damaged.
St. Louis, Mo.—Cottonwood Fiber Co. damaged. Short circuit.
Oswego, N. Y.—Station hospital, Fort Ontario, being remodeled into apts., destroyed.
Biltmore, N. C. — Plt. of Swannanoa Textile Corp., Koon development, damaged. Extension cord ignited cotton.
Williamston, N. C.—Storage whse. of Williamston Package Mfg. Co. damaged.
Abingdon, Va. — Farmers' Tobacco whse. and dwelling, destroyed. Cable lines of Inter-Mountain Telephone Co., leading to 41 cities, destroyed.
Kelvington, Sask. — General store, garage and bakery, destroyed.
Los Angeles, Cal.—5,000,000 feet reclaimed lumber in yard of Allstate Wrecking & Salvage Co., Compton Township, destroyed. Motor crane snagged volt power line.
Durango, Colo.—Rio Grande Motor Ways whse., adj. bridge and material whse., and railway coach, destroyed.
Newark, N. J.—New Jersey Forwarding Co. destroyed.
Chicago, Ill.—Cicero Sash & Door Co. damaged.
Chandler, Okla. — Rageth Central drug store; Dindhorst variety store; Bass Studio; Lois Jane dress shop; Bonnie's tailoring shop; Dixie theater and Hellman's dept. store, damaged.
Westminster, Vt.—Sales stables of A. F. Chickering farm destroyed.
Roseburg, Ore.—California-Oregon Power Co.'s volt transformer destroyed.

SAVE LIVES!
GET AT A FIRE FAST!
SPEED RESCUE WORK
with this amazing hi-speed
SAW GUN

QUICKLY CUTS THRU
ALL METALS
Stainless or Monel
Corrugated or Plain
WOOD
Other Materials

An Indispensable Fire-Fighting Tool

The Saw-Gun is an amazingly efficient Portable Power Saw that speedily cuts thru all metals, wood and other materials. Firemen equipped with this essential rescue tool can get at a fire or entrapped persons QUICKLY! Cuts rapidly thru heavy gauge steel. No need to waste precious time removing iron gratings, or other obstructions . . . cut them out of the way with the Saw-Gun! Saves time! Saves lives!

Easily attaches to any electric or air-drill, or flexible shaft. Uses ordinary hack saw blade for cutting. Very simple to operate.

Modern fire-fighters require modern tools. The Saw-Gun will prove an extremely valuable addition to your present equipment. Get all the details NOW!

SEE YOUR JOBBER OR WRITE

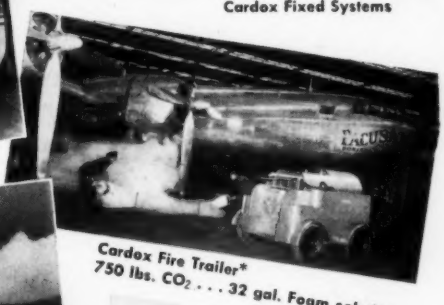
W. H. HOWLAND
2533 East 73rd Street
Chicago 49, Illinois

Colorado Springs, Colo.—Stratton Park Pavilion destroyed.
Paris, Ill. — E. W. Vanzant Company's grain elevator, destroyed.
Ludington, Mich.—Delicatessen store of Harold Gibbs, damaged.
Mineral City, Ohio—Kelsey Clay Company plt. and whse. damaged.
Barnesboro, Pa.—Leadbetter and adj. Smith apt. bldgs., damaged.
William, W. Va.—Two-story bldg. housing the Piggly-Wiggly grocery store destroyed; Feuchtenberger bakery and G. C. Murphy general merchandise store, damaged.
Clear Lake, Ia.—The Surf Ballroom destroyed.
Sioux City, Ia.—Intl. Flour Milling Co. plt., near Leeds, destroyed.
Athol, Mass.—No. 2 barn on Cass dairy farm, Chestnut Hill, destroyed.
Columbus, Neb.—Montgomery Ward store and whse. damaged.
Rock Hill, S. C.—M & M Pontiac Co., outside city limits, Lancaster Highway, destroyed.
Harlan, Ky. — Five frame two-story bldgs., a grocery, restaurant, jewelry store, shoe repair shop and printing company, in business district, destroyed. Several other bldgs. damaged.
Avon, Ill.—Nichols Poultry & Egg Co.'s plt., destroyed.
Petoskey, Mich.—Gamble Co. store damaged.
Rochester, N. Y. — Business bldg. destroyed. Occupants included Weiss Jeweler, The Toggery Shop and Father & Son shoe store.
Akron, Ohio—Pasadena Apts. damaged.
Reedsport, Ore.—Reedsport Laundry and two adj. residences destroyed.
Seattle, Wash.—King County South Road District Shop, Bow Lake, destroyed. Arson.
Eugene, Ore.—Daintee Potato Chip Mfg. Co. destroyed.
Summerside, P. E. I.—Summerside Journal Publishing Co. bldg. damaged.
Rock Falls, Ill.—Intl. Harvester Co.'s wire mill plt. damaged. Short circuit.
Junction City, Kan.—Elevator of Junction City Milling Co. destroyed.
St. Louis, Mo.—Goedde Lumber Co. and Ready Foods, Inc. damaged.
Victoria, B. C.—Two exhibition bldgs. at Willows Fair Grounds damaged.
Smiths Falls, Ont.—Bldg. of Smiths Falls Malleable Co. destroyed.
Rutherfordton, N. C.—Service Cleaners and Rutherford Shoe Hospital destroyed. Holt's florist shop, Charm Beauty Shop and H. F. Wholesale Candy Store damaged.
Larue, Ohio.—Main hatchery bldg. of Ridgway Duck Hatchery destroyed.
Philadelphia, Pa.—Roth Buick Co. sales and service plt. and adj. John F. Maguire real estate office damaged.
Tarentum, Pa.—Siegfried Furniture Store damaged.
Wilamina, Ore.—Cascade Handle Factory destroyed.
Miami, Fla.—Florida Waste Paper and Salvage Co. bldg. damaged.
Presque Isle, Me.—Presque Isle Opera House destroyed; adj. theatre bldg. and business-apt. bldg. damaged.
Wilmington, Del.—Howard Johnson Restaurant on duPont Highway, destroyed.
Wilmington, Del.—Eight mushroom houses at Avondale, destroyed.
Prince Rupert, B. C.—Capp block and adj. Shortridge apts. destroyed.
Berkeley, Cal.—Shattuck square business block, stores and offices, damaged.
Bloomington, Ind.—Empire Stone Co. mill, five miles south, destroyed. Sparks from electric welder.
Kalamazoo, Mich.—American Natl. Bank Bldg. damaged.
Mancelona, Mich.—Old portion of Mancelona high school bldg. destroyed.
Plainwell, Mich.—Five dwellings, 500 block of South Main St., Highway US-131, and tank-trailer gasoline truck of Crystal-Flash Petroleum Co., damaged.
Eufaula, Okla.—T. H. Rogers Lumber Co. plt. damaged.
Crewe, Va.—Norfolk and Western Railroad lumber and repair shed destroyed.
Richmond, Cal.—Church of Full Gospel damaged.
Lynn, Mass.—Paul Revere bldg. occupied by John's Corner Store, Sullivan's Shade Shop, Ripley Plumbing Co., Glenmore Tailoring Co., Walter Wong Laundry and lodge rooms of Odd Fellows and Knights of Pythias, damaged.
Worcester, Mass.—Hardy Knife Co. damaged.
Washington, N. J.—King Coal & Lumber Co. damaged.
Detroit, Ore.—Dry goods store, bakery, theatre and food market damaged.
Salem, Va.—Jeffreys Laboratories damaged.
Jackson, Mich.—Bldg. occupied by McLellan Store and Tubbs' billiard parlor, damaged.
Mexico, Mo.—Montgomery Ward Co. and Kroger Grocery & Baking Co. store damaged.
Chattanooga, Tenn.—Twenty railroad boxcars and whse. destroyed; eighteen cars and telephone and telegraph cables damaged.
Suffolk, Va.—Sheffield Lumber Co. sawmill destroyed.

CARDOX
FIRE PROTECTION
Engineered to Fit Your Individual Requirements

Cardox Fixed Systems

Cardox Transitank*
750 lbs. CO_2



Cardox Fire Trailer*
750 lbs. CO_2 . . . 32 gal. Foam solution

Cardox Airport Fire Truck

Cardox Fire Truck

Cardox engineered applications of low-pressure carbon dioxide give this fast-acting, non-damaging medium new effectiveness in conquering fires, large or small, both indoors and out.

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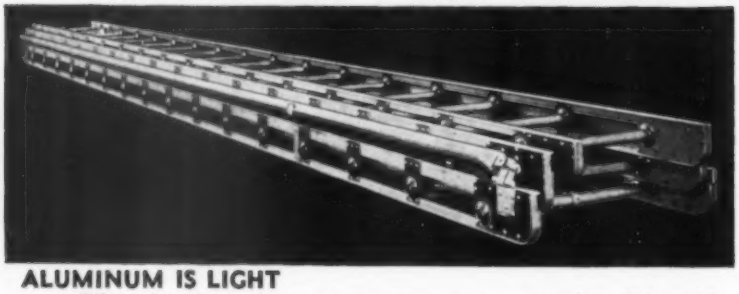

ALUMINUM IS LIGHT

When time is precious and manpower is at a premium, light-weight Aluminum Ladders are your most efficient life-saving and fire-fighting tools for they require fewer firemen to raise and operate them successfully.

ALUMINUM IS STRONG

Available in 1, 2, 3 and 4-section models, every Aluminum Ladder is heavily riveted and constructed of high-tensile-strength Aluminum Alloy. The corrugated rungs are securely fastened with aluminum expansion bushings, with the result that the rungs never become loose or break off.

ALUMINUM IS DURABLE

Practically all of the ALUMINUM FIRE LADDERS purchased since 1936 are still in use today. Being fireproof and rust proof they last longer than other types. Write for Complete Information.

"Original Manufacturers of Aluminum Ladders"

Aluminum Ladder Company

200 Carbis Street
Worthington, Pa.

Convention Dates

May 20-23 — IOWA FIRE SCHOOL. Annual meeting, Marshalltown, Ia. Director, R. C. Byrus, Fire Protection Engineer, Iowa State College, Ames, Ia.

May 24 — SOUTHERN CALIFORNIA FIRE CHIEFS CONFERENCE. Annual meeting, Glendale, Cal. Secretary, Chief C. N. Carrell, Santa Monica, Cal.

May 26-28—TENNESSEE FIREMEN'S ASSOCIATION. Annual meeting, Kingsport Inn, Kingsport, Tenn. Secretary, Chief L. L. Geisler, Johnson City, Tenn.

May 26-28 — NEW MEXICO STATE FIREMEN'S ASSOCIATION. Annual meeting, Carlsbad, N. M. Secretary, Lonnie W. Butler, Room 11, Crocket Building, Las Vegas, N. M.

May 26-29—NATIONAL FIRE PROTECTION ASSOCIATION. Annual meeting, Palmer House, Chicago, Ill. General Manager, Percy Bugbee, National Fire Protection Association, 60 Batterymarch Street, Boston, Mass.

June 2-6—SOUTH DAKOTA FIRE SCHOOL. Annual meeting, Mitchell, S. D. Secretary, South Dakota Volunteer Firemen's Association, Robert Hanigan, Pierre, S. Dak.

June 5-7—WYOMING STATE FIREMEN'S ASSOCIATION. Annual fire school and tournament, Casper, Wyo. Secretary, Charles H. Saunders, 105 South Beverly, Casper, Wyo.

June 9-11—MISSOURI VALLEY ASSOCIATION OF FIRE CHIEFS. Annual meeting, Omaha, Neb. Secretary-Treasurer, Chief Ray Tiller, Waterloo, Ia.

June 9-11 — SOUTHEASTERN ASSOCIATION OF FIRE CHIEFS. Annual meeting, Hotel Roanoke, Roanoke, Va. Secretary-Treasurer, Walter W. Stephen, Box 904, Anniston, Ala.

June 9-11—NEW YORK STATE FIRE CHIEFS' ASSOCIATION. Annual meeting, Rochester, N. Y. Secretary-Treasurer, Chief Henry F. Drake, Clinton Corners, N. Y.

June 10-13 — ILLINOIS FIRE COLLEGE Thirty-third annual meeting, University of Illinois, Champaign-Urbana, Ill. Secretary, Illinois Firemen's Association, Inc., Chief R. W. Alsip, Champaign, Ill.

June 18 — NORTHWESTERN OHIO VOLUNTEER FIREMEN'S ASSOCIATION. Annual meeting, Napoleon, Ohio. Secretary, Napoleon Fire Department, Earl Campbell.

June 18-20—MARYLAND STATE FIREMEN'S ASSOCIATION. Annual meeting, Frostburg, Md. Secretary, B. R. Benson, 303 Bosley Avenue, Towson 4, Md.

June 19-22—BERKS COUNTY FIREMEN'S ASSOCIATION TRAINING FORUM. Annual meeting. Secretary (Educational Committee), A. E. Baer, Jr., 213 S. 3rd Avenue, West Reading, Pa.

June 24-26 — NEW ENGLAND ASSOCIATION OF FIRE CHIEFS. Annual meeting, Wentworth-by-the-Sea, Portsmouth, N. H. Secretary, John W. O'Hearn, 22 Mt. Auburn Street, Watertown, Mass.

June 25—CENTRAL-WESTERN FIREMEN'S ASSOCIATION. Annual meeting, St. Mary's, Ohio. Secretary, Roger O'Donnell, Covington, Ohio.

June 26-28—HUDSON VALLEY VOLUNTEER FIREMEN'S ASSOCIATION. Annual meeting, Mechanicville, N. Y. Secretary, Chief Henry F. Drake, Clinton Corners, N. Y.

July 20-25 — TEXAS FIREMEN'S TRAINING SCHOOL. Annual meeting, Texas A. & M. College, College Station, Tex. Director, Professor H. R. Brayton, Department of Chemistry, Texas A. & M. College, College Station, Tex.

July 28-30—WISCONSIN STATE FIRE CHIEFS' ASSOCIATION. Annual meeting, Stevens Point, Wis. Secretary, Chief Arthur J. Rahn, Two Rivers, Wis.

July 28-31 — WEST VIRGINIA STATE FIRE SCHOOL. Annual meeting, West Virginia University, Morgantown, W. Va. R. E. Hanna, Jr., Fire Service Extension School, School of Mines, University of West Virginia, Morgantown.

July 28 - Aug. 1 — PENNSYLVANIA FIRE SCHOOL. Ninth annual meeting, Lewistown, Pa. Director, Edgar A. Spotz, Adviser, Fire Service Training, Public Service Institute, Harrisburg, Pa.

Aug. 4-5 — WISCONSIN PAID FIREMEN'S ASSOCIATION. Annual meeting, LaCrosse, Wisconsin. Secretary, John Kromel, 4042 Sheridan Road, Kenosha, Wis.

Aug. 8-10—OHIO STATE FIREMEN'S ASSOCIATION. Annual meeting, Hotel Carter, Cleveland, Ohio. Secretary, Chief M. W. Gifford, 5105 Market Street, Youngstown 5, Ohio.

Aug. 12-15 — DOMINION ASSOCIATION OF FIRE CHIEFS. Annual meeting, London, Ont. Secretary-Treasurer, Chief Allan H. Clark, Lakefield, Ont.

Convention Dates

Aug. 16—BALTIMORE COUNTY VOLUNTEER FIREMEN'S ASSOCIATION. Annual convention, Lutherville, Md. Secretary, W. A. Chenowith, Milford Road, Pikesville 8, Md.

Aug. 18—EASTERN ASSOCIATION OF FIRE CHIEFS. Annual meeting, Hotel Pennsylvania, New York, N. Y. Secretary, Chief Charles E. Clark, Box 271, Wayne, Pa.

Aug. 19-22—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. Annual meeting, Hotel Pennsylvania, New York, N. Y. Secretary-Treasurer, Chief Daniel B. Tierney, 8 Robbins Road, Arlington 74, Mass.

Aug. 19-22 — FIREMEN'S ASSOCIATION OF THE STATE OF NEW YORK. Diamond Jubilee Convention, Catskill, N. Y. Convention Secretary, Donald D. Haines, 153 Broad Street, Catskill, N. Y.

Aug. 28-30—WEST VIRGINIA FIREMEN'S ASSOCIATION. Annual meeting, Charles Town, W. Va. Secretary, J. D. Brehany, Ridgeley, W. Va.

Aug. 28-30 (tentative)—CONNECTICUT FIREMEN'S ASSOCIATION. Annual meet., Naugatuck, Conn. Secretary, John Moehring, 56 Tom's Road, Stamford, Conn.

Sept. — JEFFERSON COUNTY VOLUNTEER FIREMEN'S ASSOCIATION. Annual convention and tournament, Chaumont, N. Y. Secretary, Jack Farrell, 513 Factory St., Dexter, N. Y.

Sept. 1-5—WESTERN PENNSYLVANIA FIREMEN'S TRAINING INSTITUTE. Annual meeting, State Teachers College, California, Pa. Secretary, Henry Neill, Box 83, Vestaburg, Pa.

Sept. 2-4—KENTUCKY FIREMEN'S ASSOCIATION. Annual meeting, Hazard, Ky. Secretary, Captain V. A. Beam, 818 Sutcliffe Avenue, Louisville, Ky.

Sept. 23-26—CALIFORNIA STATE FIREMEN'S ASSOCIATION. Annual meeting, Hoberg's, Cal. Secretary, James D. Young, 257 Robertson, Boulevard, Beverly Hills, Cal.

Sept. 29-Oct. 2 — INTERNATIONAL MUNICIPAL SIGNAL ASSOCIATION. Annual meeting, Grand Rapids, Mich. Secretary, Irvin Shulsinger, 8 East 41st Street, New York 17, N. Y.

Oct. 7-9—FIREMEN'S ASSOCIATION OF THE STATE OF PENNSYLVANIA. Annual meeting, Lancaster, Pa. Secretary, Chief Charles E. Clark, Box 271, Wayne, Pa.

Oct. 23-25—OHIO FIRE CHIEFS ASSOCIATION. Annual meeting, Lima, Ohio. Secretary, William H. Rosche, Asst. Chief, Fire Department, Canton 2, Ohio.

Fire Prevention Winners Named

The city of Mansfield, Ohio, was the grand winner in the 1946 National Fire Prevention Contest, conducted by the National Fire Waste Council of the U. S. Chamber of Commerce.

The award was made by a board of judges of the National Fire Waste Council, an organization created by the Chamber of Commerce of the United States to conduct fire prevention efforts throughout the United States.

More than 700 cities are enrolled annually in this all-the-year-round campaign of fire protection. Most of the effort is carried on by local chambers of commerce, assisted by other civic organizations and local municipal governments.

Although fires on the whole are taking their heaviest toll since 1933, many cities throughout the country, through organized effort, have reduced their fire losses from last year. The Fire Waste Council estimates that the work done by the local fire prevention committees, under the direction of local chambers, saved more than $20,000,000 fire loss in 1946.

For purposes of the contest, participating cities are divided into six population classes. Winners in each of these classes for 1946 are:

Class I—Chicago, Illinois—Population over 500,000.

For Dependability Plus Efficiency

Specify HALE

FIRE PUMPS HALE CONSHOHOCKEN, PA

For reliable, efficient performance DEPEND on Hale Fire Pumps . . . built in all standard capacities.

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DEPENDABLE

STERLING MODEL "M"
GENERAL ALARM SIREN
You Can Depend On It ALWAYS

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As absolutely dependable, tried and proven siren for communities of all sizes. Loud, clear, simple to install and no maintenance to bother with. Embodying the "know how" of the oldest and largest makers of siren signals in the fire field. Write for descriptive literature and list of towns using the model "M."

ALSO . . . MANUFACTURERS OF A COMPLETE LINE OF APPARATUS SIRENS

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HYDRANTS, VALVES
and Pipe Line Accessories

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Above Tapping Sleeve and Valve are used to tap a main under pressure for a branch to automatic sprinklers, fire hydrants, etc. Cut-in may be made without interrupting water service.

VALVES: A. W. W. A. types, iron body, bronze mounted with double-disc parallel seat or solid wedge type. Non-rising stem, outside screw and yoke; or, with sliding stem and lever. Also furnished hydraulically operated. Square bottom type operates in any position. All are rugged and dependable, made of best material with highest quality workmanship.

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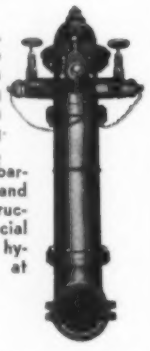

We manufacture A.W.W.A. standard hydrants and also Mill Yard Hydrant shown at right, the latter giving individual control of each outlet. Dry top, revolving head, easy to lubricate, high efficiency because barrel diameter not reduced and no working parts or obstructions in waterway. Special Traffic Model A.W.W.A. hydrant designed to yield at ground line under impact.

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Classified Advertisements

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FOR SALE
Fire Equipment—Unused Gov't Surplus

Extinguishers, Couplings, Alarm Bells.
Top Brand, A-1 Condition at Bargain Prices.
15 lbs. CO-2 Extinguisher, Charged, Pistol Grip, $25.
2½ inch Couplings, Solid Brass, N.S.T., $2.50 per pair.
1½ inch Couplings, Solid Brass, I.P.T., $1.50 per pair.
1½ inch Caps, Brass, with Chain, All Threads, 25¢.
8 inch Electric Alarm Bell, Heavy, 110 A.C., $7.50.
F.O.B. and C.O.D., Haiprin Supply Co., 140 E. 2nd Street, Los Angeles 12, Calif.

FOR SALE

One—1,000 Gallon Ahrens-Fox Piston Pumper, Model L 16, in fine Working Condition. This Fire Engine is a good buy for any Town. Can be seen at the Good Will Fire Company, Pottstown, Pa., or write for particulars. Robert Roth, Chairman, Good Will Steam Fire Engine Co. No. 1, Pottstown, Pa.

FOR SALE

One Mack Quadruple Ladder Truck, with 750-gallon pump, booster tank, booster hose, hose basket, and regular ladder truck equipment, all trussed ladders. Truck in A-one condition. Box 15, FIRE ENGINEERING, 24 West 40th Street, New York 18, N. Y.

FOR SALE

1935 Fixible Buick Cream Colored Ambulance. Flasher Lights, Spare Tire, Cot, Cot Hooks, Cabinets, etc. Car in good condition—Good Tires. Linus M. Wurtz, Boston, New York.

Class II—Cincinnati, Ohio—Population from 250,000 to 500,000.

Class III—Tulsa, Oklahoma—Population from 100,000 to 250,000.

Class IV—Newton, Massachusetts—Population from 50,000 to 100,000.

Class V—Mansfield, Ohio—Population from 20,000 to 50,000.

Class VI—Beatrice, Nebraska—Population under 20,000.

In each population class, besides the awards of specially designed plaques for the top winner, a number of runner-up cities are cited for honors. Cities that were cited for honors are the following:

Class I: Detroit, Michigan; Buffalo, New York; Minneapolis, Minnesota; Milwaukee, Wisconsin; Philadelphia, Pennsylvania.

Class II: Providence, Rhode Island; Atlanta, Georgia; Rochester, New York; Kansas City, Missouri; Dallas, Texas; Louisville, Kentucky; Toledo, Ohio;

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THE FIRE CHIEF'S HANDBOOK

The Greatest Book on Fire Fighting

Written by Fred Shepperd, in collaboration with the Educational Committee of the International Association of Fire Chiefs.

The most complete and authoritative source of practical, helpful data—gives reliable and dependable answers to almost every question that might come up in modern fire fighting methods.

Progressive fire chiefs, interested in keeping themselves abreast of current methods of meeting fire emergencies, need this book. It is the book every fire fighter should own and study.

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Houston, Texas; Columbus, Ohio; Indianapolis, Indiana.

Class III: Wichita, Kansas; Hartford, Connecticut; Shreveport, Louisiana; Spokane, Washington; Austin, Texas; South Bend, Indiana; Oklahoma City, Oklahoma; New Haven, Connecticut; Chattanooga, Tennessee; Scranton, Pennsylvania.

Class IV: Newton, Massachusetts; Decatur, Illinois; Terre Haute, Indiana; Orlando, Florida; Pittsfield, Massachusetts; Lansing, Michigan; Schenectady, New York; Alameda, California; Bethlehem, Pennsylvania; Portland, Maine; Anderson, Indiana.

Class V: Mansfield, Ohio; Parkersburg, West Virginia; Moline, Illinois; Fort Dodge, Iowa; Jamestown, New York; Massillon, Ohio; Fargo, North Dakota; Marietta, Georgia; Rock Island, Illinois; Norristown, Pennsylvania; Billings, Montana.

Class VI: Beatrice, Nebraska; Port Angeles, Washington; Bartlesville, Oklahoma; Stevens Point, Wisconsin; Fort Collins, Colorado; Columbus, Indiana; Van Wert, Ohio; Boulder, Colorado; Valley City, North Dakota; Garden City, Kansas; Ridgewood, New Jersey.

Fire Chief Made Law Enforcement Officer

The City of Lewiston, Maine, has been preparing for Clean-Up Week, and the question has arisen as to the authority of firemen and fire chief in enforcement of orders to clean up debris and rubbish allowed to accumulate in alleys,

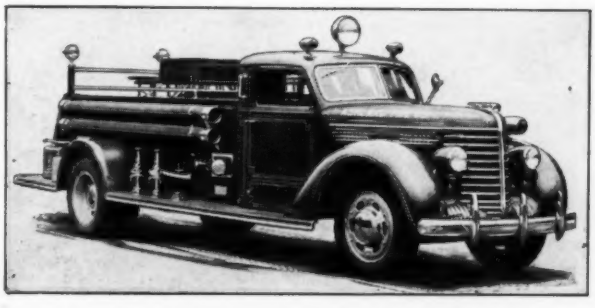
Photo by Paul Marcoux

Chief Zephirin F. Drouin of the Lewiston Fire Department Being Fingerprinted Prior to Being Sworn in as a Deputy Sheriff by Sheriff Joseph Gendron of Androscoggin County, Maine

etc. Newly elected Mayor Louis P. Gagne suggested that firemen and the Fire Chief should be sworn in as police officers, thereby giving them dual authority. The Police questioned this authority, but Sheriff Joseph J. Gendron immediately notified Lewiston's Fire Chief Z. F. Drouin that he would gladly deputize him as deputy sheriff of Androscoggin County. Deputizing firemen followed a motion by the Board of Aldermen to the effect that an ordinance be drawn up authorizing firemen and police to be designated for special police duty in all dance halls, boxing matches, and other places of public entertainment.

UNITED STATES MOTORS CORP. 430 Nebraska St. Oshkosh. Wis.

Champion Fire Apparatus



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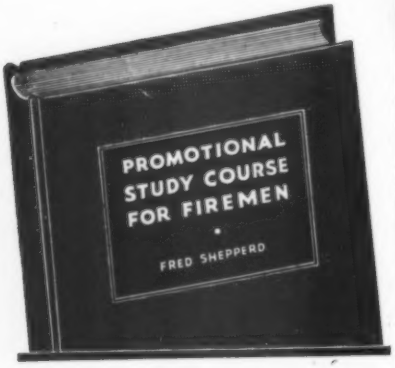

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Published in response to numerous requests from fire department officers and men working for advancement, this book embraces the famous "Promotional Study Course" which ran serially in FIRE ENGINEERING and proved to be so tremendously popular. Covering in chapter lessons most of the important phases of fire protection promotional study—mainly in questions and answers form—all of it in the concise style generally used and preferred by civil service examiners.

To fire chiefs and other officials responsible for preparing examinations, this book will be found most helpful. And it is a mighty good reason, too, why fire officers and men should find it of estimable value in studying for advancement.

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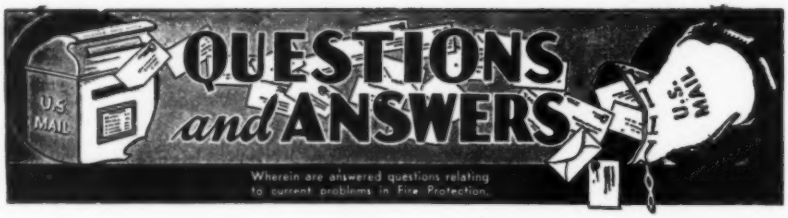

Smoke, Hot Air Explosions

To the Editor:

1. Define (a) smoke explosion and (b) hot air explosion. What are the differences, if any.

2. Is the use of explosives or heavy streams on certain fires, for the purpose of utilizing sudden cross rushing of air, a form of fire extinguishment by cooling down the combustble material rather than by "snuffing" out a fire? J. E. C.

Answer: The terms "smoke explosion" and "hot air explosion" are used interchangeably. They both mean the same thing.

In either case, the accumulation of partly burned gases in a building, during the course of a smoldering fire, provide fuel, which, if brought in contact with a source of oxygen (air) and provided with a source of ignition, will cause rapid combustion of the mixture of air and gas. The result is a "smoke explosion" or "hot air explosion."

Where fires are knocked out by a blast, the process may be technically described as the separation of the fuel from the flame.

However, this method of extinguishing fire, which has been used with some success in connection with gas well fires, is also known as "snuffing out" a fire.

Discharge from Open Butt

To the Editor:

What is the formula for finding discharge from an open butt on 1½-inch hose? S. A. G.

Answer: The formula for calculating the discharge from an open butt on a 1½-inch line of hose is:

$$Q = 29.7 \times d^2 \times \sqrt{P} \times .90$$

As an example, assume we have 16 pounds discharge pressure at a 1½-inch open butt.

$$\text{Then } Q = 29.7 \times 1\tfrac{1}{2} \times 1\tfrac{1}{2} \times \sqrt{16} \times .90$$
$$= 29.7 \times 2.25 \times 4 \times .90$$
$$= 240.57 \text{ gallons per minute}$$

Supply to Baker Pipe

To the Editor:

"A" pumper with 170 pounds engine pressure, 400 feet of 3-inch hose, and "B" pumper with 190 pounds engine pressure, 350 feet of 2½-inch hose, are siamesed into a Baker Pipe with a 2-inch tip. What is the nozzle pressure? What is the discharge? Would both pumps discharge water to the pipe? O. J. C.

Answer: In the problem you give, wherein two lines from separate pumpers are feeding a 2-inch Baker pipe, both pumpers will deliver water continually to the pipe.

The pressure at the Baker pipe will be much less than the pressure at either pumper, so that if we assume that one of the clapper valves would close, the entire pressure of the pump supplying water through this clapper valve would be transmitted to the clapper valve and it would immediately open.

Thus we have no difficulty with the layout as given in either pump laying down on the job.

To solve this problem, it is necessary to do it by the "trial and error" method. This consists of assuming a nozzle pressure and then checking back for discharge from each engine, and comparing this discharge with the discharge from the nozzle. The sum of the discharges from the two pumpers should be approximately equal to the discharge from the two-inch Baker pipe.

Assume, first, that the nozzle pressure is 100 pounds.

The discharge will be 1189 gallons per minute.

With the pressure at the nozzle of 100 pounds, the friction loss from Engine A will be 70 pounds, and the friction loss from Engine B will be 90 pounds.

The friction loss in the line from A to the cellar pipe will be 17.55 or 17½ pounds per hundred feet.

The flow through a line of 3½-inch hose which gives 17½ pounds friction loss is 450 gallons per minute.

The friction loss per 100 feet through the line supplied by Engine B is 25.72 pounds, and the flow representing this friction loss is 330 gallons per minute.

450 plus 330 gives 780 gallons per minute, which is a great deal less than the discharge from a 2-inch nozzle at 100 pounds.

Therefore we'll have to make a second assumption.

We shall assume that the nozzle pressure is 80 pounds. Then the discharge will be 1,063 gallons per minute.

Friction loss in line from Engine A will be 22.5 pounds per 100 feet and through the line from Engine B, 31.4 pounds per 100 feet.

The flow through line A will then be 520 gallons per minute and through line B, 370 gallons per minute.

The total of these two flows, 520 and 370 gallons per minute is 890. But the discharge from a 2-inch nozzle at 80 pounds is 1,063 gallons per minute.

Thus we'll have to make still another assumption.

This time we will assume a nozzle pressure of 66 pounds at the 2-inch nozzle, which will give us a flow of 965 gallons per minute.

The friction loss in the line from Engine A will be 104 pounds, or 26 pounds per 100 feet.

The flow representing this friction loss is 562 gallons per minute. The friction loss in the line from Engine B will be 124 pounds, or 34.4 pounds per

100 feet, representing a flow of 387 gallons per minute.

The sum of these two flows, 562 and 387 gallons is 949 gallons per minute, which tallies fairly well with the flow from a 2-inch nozzle at 66 pounds, or 965 gallons per minute.

Thus the two pumpers will be operating at 170 and 190 pounds per square inch, and the one operating at 170 pounds will be giving a discharge of approximately 562 gallons per minute, while the discharge from pumper B at 190 pounds will be approximately 387 gallons.

Drawing a Vacuum

To the Editor:

A 300-gallon pumper is on a dead end of a small water main and draws a vacuum. The operator had to slow up motor to operate pump with the water that was available. Would a pump of 750-gallon capacity have been able to get more water or get a better fire stream? The line was somewhere around 700 feet in length.

J. A. O.

Answer: If a 300-gallon pump draws a vacuum on a dead-end main, a 750-gallon pump would not be able to get any more water out of the main, assuming, of course, that both pumps are in good, tight, condition.

There might be advantage with the 750-gallon pump if the stretch from the hydrant were very long. The larger pump can develop higher pressures and can therefore overcome friction loss in longer lines of hose than can a smaller pump.

But as far as getting more water out of the main is concerned, they are both on equal basis.

Fog on High Voltage Apparatus

To the Editor:

In a recent article in a popular magazine the author states that "you can stand within 15 feet of a 250,000 volt transformer and with 150 pounds pressure and using a fog nozzle throw water on this transformer with safety. Has this been proved?

If so, what could be done with the inside switchboards of 23,000 to 30,000 volts with a 1½-inch fog nozzles and ¾-inch booster fog nozzles. C. E. S

Answer: It is safe to use fog on high voltage wires.

However, where fog is to be used on switchboards, a hazardous situation may be developed in the following manner: Water from the fog stream, collecting on the switchboard, may cause a leakage of current from one switch terminal to another, or from the switch terminal to the ground. You will appreciate that a continuous path of water would be provided in this manner from the live terminal to ground, or to other terminals, for water collecting on the switchboard would flow toward the ground in continuous streams.

In the case of high tension wires, the problem is different, for no continuous path of water is created between the high voltage conductors and the ground or other carrier.

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1837 — 1947

The Round Table

(*Continued from page* 310)

mentary School, loss $22,000; and one in Central Collegiate, loss $805,000.

We believe the basic causes of juvenile fire setting are lack of supervision, a cover for looting, sensationalism and an unbalanced equilibrium.

We believe that the children should be educated in the schools against fire setting and that the eccentrics among them be scrutinized by the teachers. Corporal punishment should be administered to offenders.

A sixteen-year-old high school student by the name of Albert Adams, now serving two years in Kingston Penitentiary, started his incendiary career some four years ago. He admitted approximately sixty-three fires during that time, climaxing same by setting fire to Queen Victoria public school, and although he would not make an admission of guilt, it is strongly suspicioned that he set fire to Central Collegiate, causing a loss of $805,000. He was eventually spotted and identified after setting fire to the house and garage next door to his own home.

Another boy, an eighteen-year-old, Leslie Groves, set several fires with no major loss. Intellectually dull, he was sentenced to the reformatory for a period of two years. He was apprehended by police in the act of setting a garage fire. His usual procedure was to traverse back alleys and set fire to any inflammable material he would see in private garages that was easily accessible.

In another case, a thirteen-year-old boy, Gerald Goren, a messenger boy for Pollock's Grocery Store, opened a case of floor cleaner, one of the bottles breaking. He lighted the cleaner to see if it would burn. This boy was not convicted and still works after four as a messenger in the same store. He was not of the malicious type, just curious.

During the Spring of 1946, so numerous were the fires being set in a section of the city covering an area of approximately six square blocks, both Adams and Groves living in this area, that firemen off duty volunteered and patrolled lanes and streets along with police and officials of the Provincial Fire Marshal's Department.

Edward Wischer, Chief, Milwaukee, Wis.: Fire setting by juveniles resulted in thirty fires being investigated in 1946. In connection with these investigations, forty-four juveniles were apprehended. These juveniles ranged in age from five to seventeen years. There were undoubtedly other fires set by juveniles in which there was no malicious intent; in other words, fires resulting from children playing with matches.

We find that poor home environment, including such factors as divorced parents, both parents working, lack of supervision of children's activities and lack of discipline often make for juvenile fire setting. To this might be added truancy, bad companions and mental deficiencies.

We believe that making parents financially responsible for damages for fires set by children would help to prevent this evil. There should be closer supervision of children's activities when they are not in school. Their choice of companions and their

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mode of play and recreation should be taken into consideration. In addition, there should be psychiatric examination and treatment of children displaying pyromanic tendencies.

One of the cases is interesting. On June 29, 1946, a fire occurred in the Sorolla Apartments, a three-story apartment building located at 1018 E. Ogden Avenue, Milwaukee. This fire involved the attic and part of the roof structure, causing damage of $19,-135.79.

On July 24, 1946, four separate fires were set in this building. Three of the fires were of a minor nature, but the fourth fire involved the attic and roof again, causing damage of $626.67.

Investigation disclosed that all fires had been set by the 12-year-old son of the superintendent of the building. This boy had come from a good home and was of superior intelligence.

As nearly as can be determined, the motive for the setting of these fires was as follows: There was a deep affection between this boy and his father. Every night after school, on weekends and holidays, instead of getting out and playing with boys his own age, this boy helped his father in the building with the cleaning, painting and other maintenance work connected with the operation of an apartment building. Consequently this boy missed the excitement that a boy of his age would customarily gain in playing with his friends. Consciously or unconsciously, he resented this lack of excitement in his life and to compensate for this, he set the fires in order to create excitement. It might also be well to mention that he "discovered" these fires and continually thrust himself into the forefront with "helpful" suggestions to fire department officials and the investigators working on the case. He wanted to be regarded as a hero and craved the attention that he believed would be centered on him as a relief from the humdrum life he lived.

Hugh Morris, Chief, San Mateo, Cal.: We have had twenty-four fires set by juveniles from January, 1946, to date. These fires caused damage of $260,-000. I believe these fires are caused by children who have poor home environment. In some cases the children have mental and physical defects.

From January 18 through February 15, 1947, we experienced five different fires involving four different buildings in the lumber yard and planing mill area. The three major fires involving the planing mills all occurred on Saturday afternoons from 4:23 P.M. to 7:05 P.M. The last fire occurred February 15. On February 16, the Chief of Police interviewed a 12-year-old boy who lived in the immediate neighborhood who had a previous record. Upon questioning this boy for approximately three hours, he admitted setting four fires, including a residence building under construction. In the presence of his mother and step-father he denied his previous confession. He was assigned to the San Mateo County Juvenile home and upon his arrival there he again confessed that he started the fires. This boy was in trouble in Sparks, Nev., before moving to San Mateo. He was a ward of the Juvenile Court in San Mateo for running away from home, missing school and general mischief. He has

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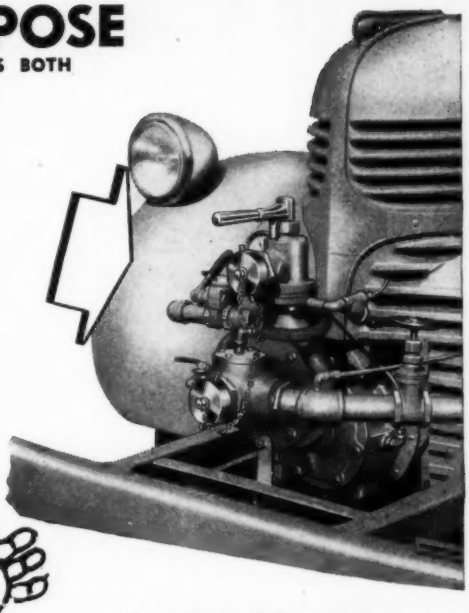

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been sent to the Napa State Hospital for further psychoanalyzation.

I believe that membership in the Boy Scouts would help to correct the problem of juvenile fire setting. I further believe that school authorities should arrange for classes to be taken through the fire stations and have the firemen explain the operation of the fire department and the danger of fires and the possibilities of injury to which the firemen are subjected both in combatting fires and in answering false alarms.

Our Police Department is now developing a teen-age recreation center under the supervision of police officers. I believe this system will materially assist young boys.

T. J. Wrenn, Acting Chief, Springfield, Mass.: We have had ten fires caused by juveniles from January, 1946 to date. One of these fires in a veterans' housing project caused an estimated loss of $3,000.

While this project was under construction two boys of good family entered one of these buildings and set it afire, which resulted in total loss to the building. When this project was being established in this particular area there were serious objections to it by many of the owners of adjacent property due to the fact that the buildings were of the barracks type and the owners felt they would depreciate the value of their property. It is my opinion that these children, hearing their parents discuss these objections, took it upon themselves to do what they could to eliminate the project.

In a two-family dwelling in one of the poorer sections of the city we had been troubled with numerous fires set by a boy of subnormal mentality. This is not surprising as both the father and mother are in the same category. None of these fires proved serious, but when it was proven that this child was the cause of these fires it was almost impossible to have him put away as the state institution to which this child should have been sent was overcrowded. It was found that he was 161st on the list even with a high priority for entrance.

I believe the basic cause of juvenile fire fighting is lack of parental supervision. Children are naturally attracted by fire, and parents should try to instill in them the danger of playing with fire.

C. W. Brown, Chief, Wichita, Kan.: Since January, 1946, this department has experienced a total of twelve separate fires being set by juveniles. Ten of these fires occurred in the "high value district" and were set by a thirteen-year-old girl who had a mania for setting fires and seeing the Fire Department respond. She was caught by fire department officials in the act of setting her tenth fire in the basement of a three story public building. She is now confined in a state institution.

A fourteen-year-old boy (mentally deranged) was responsible for setting a neighbor's garage on fire. Unlike the thirteen-year-old girl who had parents of excellent character and reputation and a good home with proper supervision, this boy practically had no home nor supervision, and was delinquent in school. However, he was not a bad boy and had been in no previous trouble. The

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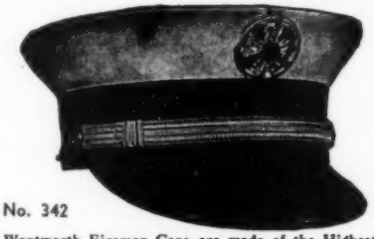

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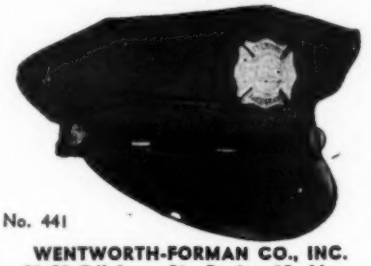

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neighbor whose garage was involved in the fire had previously circulated a petition among the people in the vicinity where the boy lived, to place a sister of his in the state institution for juvenile delinquency. The boy resented the action taken by his neighbor, and decided he deserved being punishment for interfering with his family affairs so retaliated by setting his garage on fire. The boy is now in a state institution.

In addition to the above, it has been fairly well established that approximately twelve other incipient fires have occurred through small children starting fires with matches. However, we have no definite proof.

None of the fires in question developed into extensive losses. The ten fires set by the thirteen-year-old girl amounted to less than twenty-five dollars ($25.00). The garage, which involved the fourteen-year-old boy, amounted to approximately one hundred and fifty dollars ($150.00).

We believe juvenile fire setting can in most part be contributed directly to the parents or those acting in a supervisory capacity for children. At least that has been our experience in practically all juvenile cases.

In our opinion, to correct this situation to any degree, it will require an extensive educational program for the parents. Wichita has established a program of this nature by encouraging fire prevention courses in all schools, Parent Teachers Associations, scout groups, churches, civic groups and all other organizations of any significance.

Perhaps recreation centers—under proper supervision—should be developed to provide suitable entertainment for teen-age groups. Such a program, of course, would have to be attractive to the extent of diverting their attention and activities from their former environments.

New Pension System for Charlotte

Charlotte, N. C., firemen, who on April 3rd, were separated from the State retirement system, now have statutory permission by enactment of the North Carolina General Assembly on the same day to begin paying 5 per cent of their salaries into a local system of retirement and disability benefits.

The bill, passed in the closing hours of the North Carolina legislature at Raleigh, sets up benefits for firemen retired after 25 years of service, or after 65 years of age, as well as benefits to firemen disabled in service.

Funds from which the benefits are paid accrue from deductions of 5 per cent of firemen's salaries plus an equal amount contributed by the city. Money which Charlotte firemen have paid into the State system will be returned to the city retirement system, which is to be administered by a seven-member board of trustees, three of whom shall be named by the firemen.

The trustees will not have authority to pay any benefits until the retirement fund has reached $200,000. Meantime the city is authorized to continue necessary benefit payments to retired or disabled firemen.

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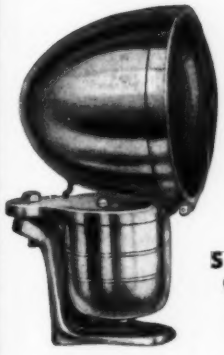

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MAY, 1947

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EFFECTIVE FIRE STREAMS AND EFFICIENT FIRE LADDERS ARE MIGHTY IMPORTANT

The combination of effective fire streams from Pirsch pumping engines and efficient aerial ladders as built by Pirsch is hard to beat in combating mean or difficult fires.

Background and years of experience in the fire engine business are necessary to produce apparatus having the high standards of performance and efficiency found in Pirsch apparatus.

The Pirsch pumper featured above has been delivered to City of Albany, Ga.

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